SUPER®

SUPER® X8DTU-6F+
SUPER® X8DTU-6TF+

USER'S MANUAL

Revision 1.0

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our website at www.supermicro.com.**

Super Micro Computer, Inc. ("Supermicro") reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software and documentation, is the property of Supermicro and/or its licensors, and is supplied only under a license. Any use or reproduction of this product is not allowed, except as expressly permitted by the terms of said license.

IN NO EVENT WILL SUPER MICRO COMPUTER, INC. BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPER MICRO COMPUTER, INC. SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Supermicro's total liability for all claims will not exceed the price paid for the hardware product.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate".

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

Manual Revision 1.0

Release Date: April 30, 2010

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document.

Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2010 by Super Micro Computer, Inc.
All rights reserved.

Printed in the United States of America

Preface

This manual is written for system integrators, PC technicians and knowledgeable PC users. It provides information for the installation and use of the SUPERMICRO X8DTU-6F+/X8DTU-6TF+ motherboard.

About This Motherboard

The SUPERMICRO X8DTU-6F+/X8DTU-6TF+ motherboard supports the Intel 5500/5600 Series processors, the first dual-processing platform that supports the Intel Quick-Path Interconnect (QPI) Technology, providing the next generation point-to-point system interface to replace the current Front Side Bus. With the 5500/5600 Series processors built in, the X8DTU-6F+/X8DTU-6TF+ motherboard substantially enhances system performance in a small form-factor package. Please refer to our website (http://www.supermicro.com/products/) for updates on supported processors. This product is intended to be installed and serviced by professional technicians.

Manual Organization

Chapter 1 provides quick installation instructions.

Chapter 2 describes the features, specifications and performance of the motherboard and provides detailed information about the chipset.

Chapter 3 provides hardware installation instructions. Read this chapter when installing the processor, memory modules and other hardware components into the system. If you encounter any problems, see **Chapter 4**, which describes troubleshooting procedures for video, memory and system setup stored in the CMOS.

Chapter 5 includes an introduction to the BIOS and provides detailed information on running the CMOS Setup utility.

Appendix A provides BIOS Error Beep Codes.

Appendix B lists Other Software Program Installation Instructions**.**

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself:

Danger/Caution: Instructions to be strictly followed to prevent catastrophic system failure or to avoid bodily injury

Warning: Important information given to ensure proper system installation or to prevent damage to the components

Note: Additional Information given to differentiate various models or provides information for correct system setup.

Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Website:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

Asia-Pacific

Address:	Super Micro Computer, Inc.
	4F, No. 232-1, Liancheng Rd.
	Chung-Ho 235, Taipei County
	Taiwan, R.O.C.
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Website:	www.supermicro.com.tw
Technical Support:	
Email:	support@supermicro.com.tw
Tel:	886-2-8228-1366, ext.132 or 139

Table of Contents

Preface

Chapter 1 Quick Installation Guide

1-1 Installing the CPU 1-1
1-2 Installing the Passive CPU Heatsink 1-1
1-3 Installing the Memory Modules 1-2
1-4 Installing the I/O Shield 1-2
1-5 Installing the Motherboard 1-3
1-6 Connecting the Power Supply 1-3
1-7 Installing Internal Peripherals 1-4
1-8 Installing External Peripherals 1-4

Chapter 2 Overview

2-1 Overview 2-1
2-2 Chipset Overview 2-11
2-3 Special Features 2-12
2-4 PC Health Monitoring 2-12
2-5 ACPI Features 2-13
2-6 Power Supply 2-13
2-7 Overview of the Nuvoton WPCM450 Controller 2-14
2-8 Super I/O 2-14

Chapter 3 Installation

3-1 Static-Sensitive Devices 3-1
3-2 Processor and Heatsink Installation 3-2
Installing an LGA 1366 Processor 3-2
Installing a Passive CPU Heatsink 3-4
Removing the Passive Heatsink 3-5
Installing an Active Heatsink 3-6
Removing the Active Heatsink 3-7
3-3 Installing and Removing the Memory Modules 3-8
Installing & Removing DIMMs 3-8
Removing Memory Modules 3-8
3-4 Motherboard Installation 3-13
Tools Needed 3-13
Location of Mounting Holes 3-13
Installing the Motherboard 3-14
3-5 Control Panel Connectors/I/O Ports 3-15
Back Panel Connectors/I/O Ports 3-15

Back Panel I/O Port Locations and Definitions 3-15
ATX PS/2 Keyboard and PS/2 Mouse Ports 3-16
Universal Serial Bus (USB) 3-17
Serial Ports 3-18
Video Connector 3-18
Gigabit Ethernet Ports 3-19
10Gb TLAN Ports and SFP+ Devices (X8DTU-6TF+) 3-19
Unit Identifier Switches 3-20
Front Control Panel 3-21
Front Control Panel Pin Definitions 3-22
NMI Button 3-22
Power LED 3-22
HDD/FP UID Switch 3-23
NIC1 LED Indicator 3-23
NIC2 LED Indicator 3-24
Overheat (OH)/Fan Fail/PWR Fail/UID LED 3-24
Power Fail LED 3-25
Reset Button 3-25
Power Button 3-26
3-6 Connecting Cables 3-27
Power Connectors 3-27
Fan Headers 3-28
Chassis Intrusion 3-28
Internal Speaker 3-29
IPMB 3-29
DOM Power Connector 3-30
Overheat LED/Fan Fail 3-30
T-SGPIO 1/2 Headers 3-31
Power SMB (I^2C) Connector 3-31
UIO Power Connector 3-32
SAS BBU Connector 3-32
3-7 Jumper Settings 3-34
Explanation of Jumpers 3-34
GLAN and TLAN Enable 3-34
CMOS Clear 3-35
Watch Dog Enable/Disable 3-35
I^2C Bus to PCI-Exp. Slots 3-36
VGA Enable 3-36
SAS Enable 3-37

3-8 Onboard LED Indicators 3-38
GLAN 1/2 LEDs 3-38
IPMI Dedicated LAN LEDs 3-38
10Gb_LAN LED (X8DTU-6TF+) 3-39
Onboard Power LED 3-39
Rear UID LED 3-40
BMC Heartbeat LED 3-40
SAS Activity & SAS Heartbeat LEDs 3-41
SAS Error LED 3-41
3-9 Serial ATA (SATA) and Serial Attached SCSI (SAS) Connections 3-42
Serial ATA Ports 3-42
SAS Ports 3-42

Chapter 4 Troubleshooting

4-1 Troubleshooting Procedures 4-1
Before Power On 4-1
No Power 4-1
No Video 4-2
System Boot Failure 4-2
Losing the System's Setup Configuration 4-2
Memory Errors 4-3
When the System Becomes Unstable 4-3
4-2 Technical Support Procedures 4-4
4-3 Frequently Asked Questions 4-5
4-4 Returning Merchandise for Service 4-6

Chapter 5 BIOS

5-1 Introduction 5-1
5-2 Main Setup 5-2
5-3 Advanced Setup Configurations 5-4
5-4 Security Settings 5-25
5-5 Boot Configuration 5-27
5-6 Exit Options 5-28

Appendix A BIOS Error Beep Codes

A-1 BIOS Error Beep Codes A-1

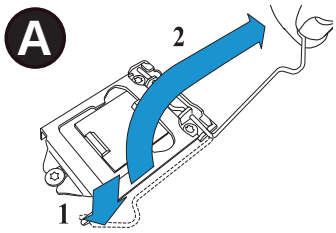
Appendix B Software Installation Instructions

B-1 Installing Software Programs B-1
B-2 Configuring Supero Doctor III B-2

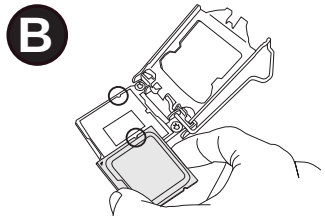
Chapter 1

Quick Installation Guide

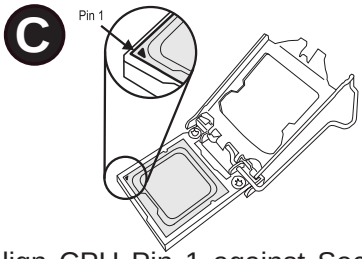
1-1 Installing the CPU



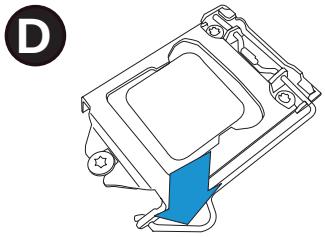
A. Press the socket clip down to unlock it. Gently lift the socket clip to open the load plate.



B. Align the CPU key with the socket key.



C. Align CPU Pin 1 against Socket Pin 1. Once they are aligned, lower the CPU down to the socket.



D. Once the CPU is fully seated on the socket, press the socket clip down to lock it.

⚠ To avoid damage, do not rub the CPU pins against the socket.

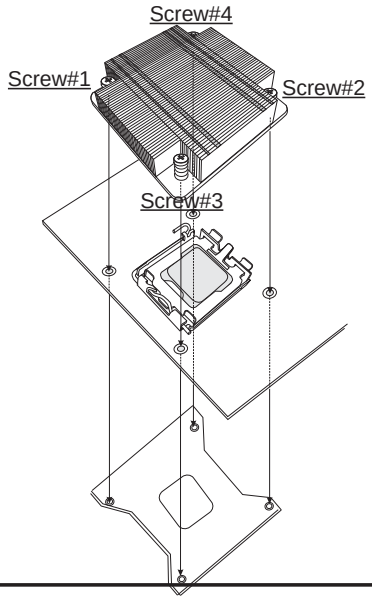
1-2 Installing the Passive CPU Heatsink

A. Do not apply thermal grease on the CPU or the heatsink; the required amount has been applied.

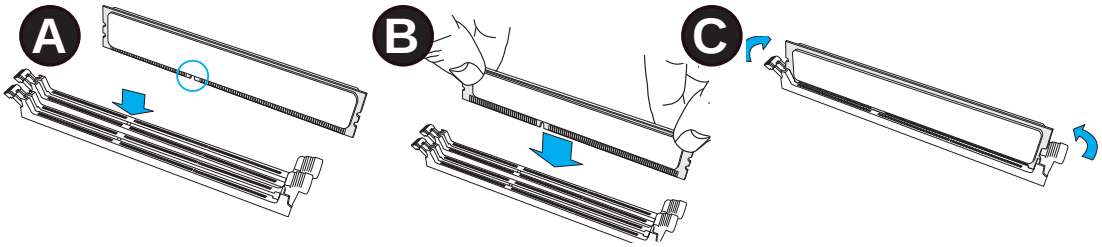
B. Place the heatsink on top of the CPU, making sure that the mounting holes are aligned with those on the retention mechanism on the back side of the CPU.

C. Install two diagonal screws and tighten them until just snug. (Do not fully tighten the screws to avoid damaging the CPU.)

D. Finish the installation by fully installing all screws.



1-3 Installing the Memory Modules

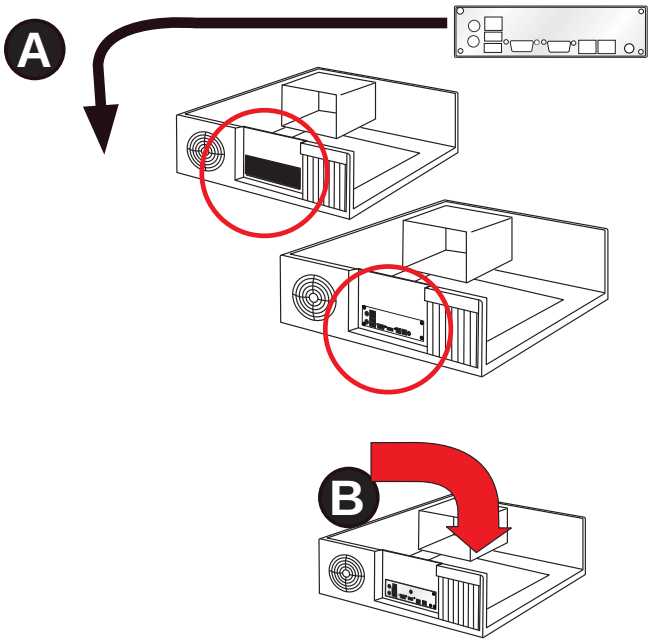


A. Align the key on the DIMM module against that of the DIMM socket.

B. Insert the DIMM module straight down to the DIMM socket.

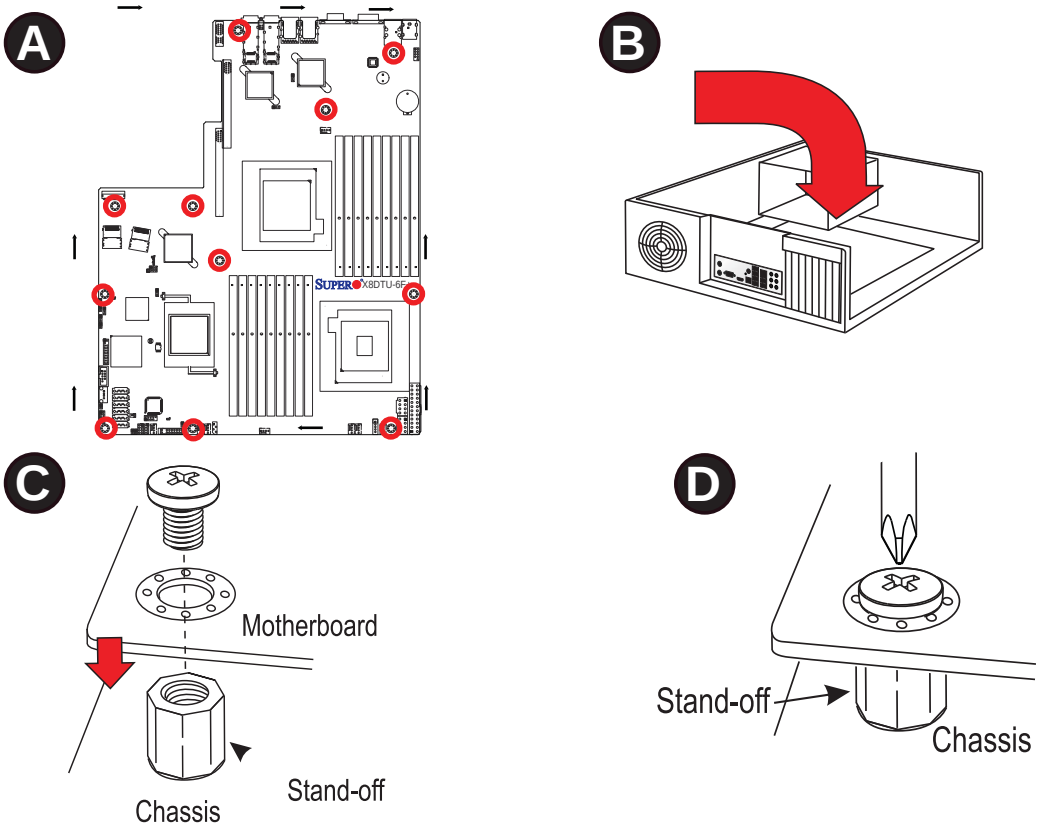
C. Press the notches on the ends of the DIMM module inwards to lock it.

1-4 Installing the I/O Shield

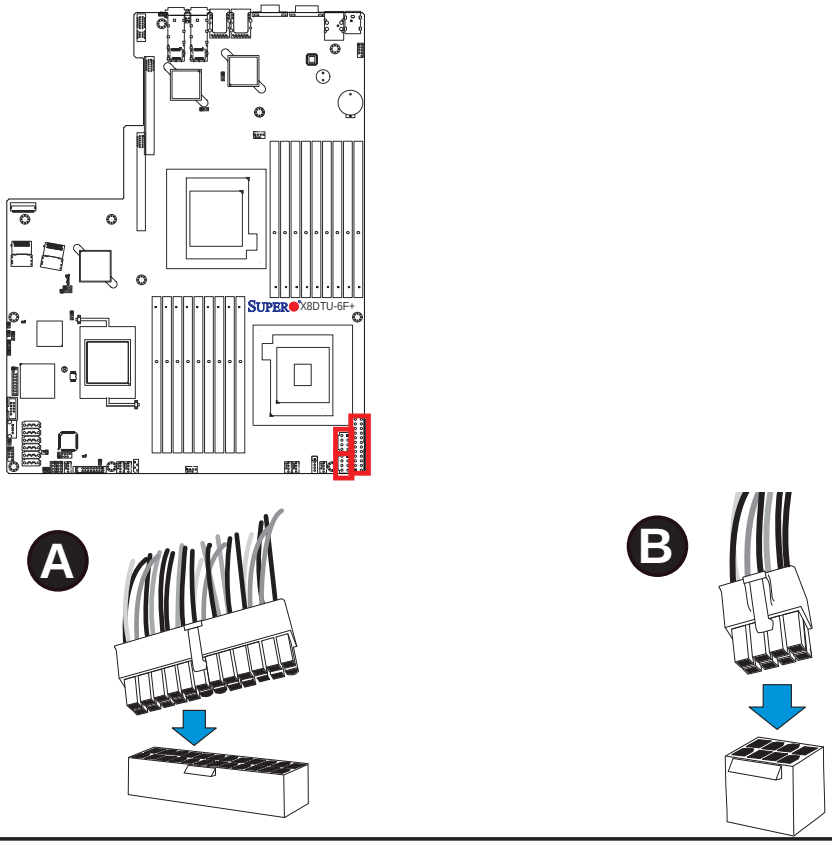


Note: Chassis and I/O plate images are for illustration only. They may be different from what you have.

1-5 Installing the Motherboard

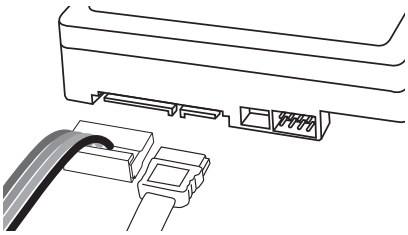


1-6 Connecting the Power Supply

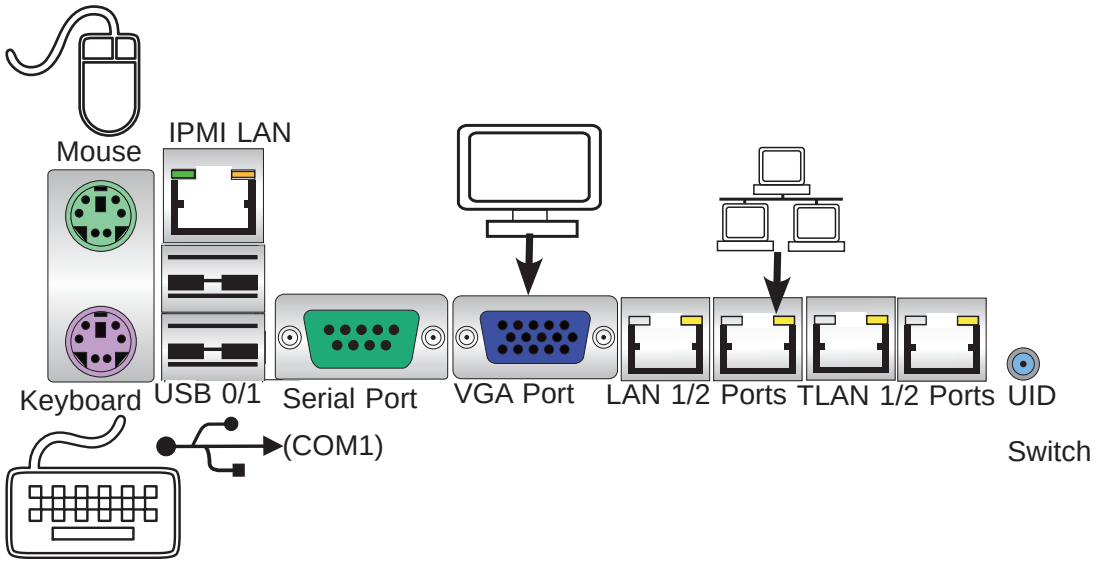


1-7 Installing Internal Peripherals

SATA / SAS Drives



1-8 Installing External Peripherals



Chapter 2

Overview

2-1 Overview

Checklist

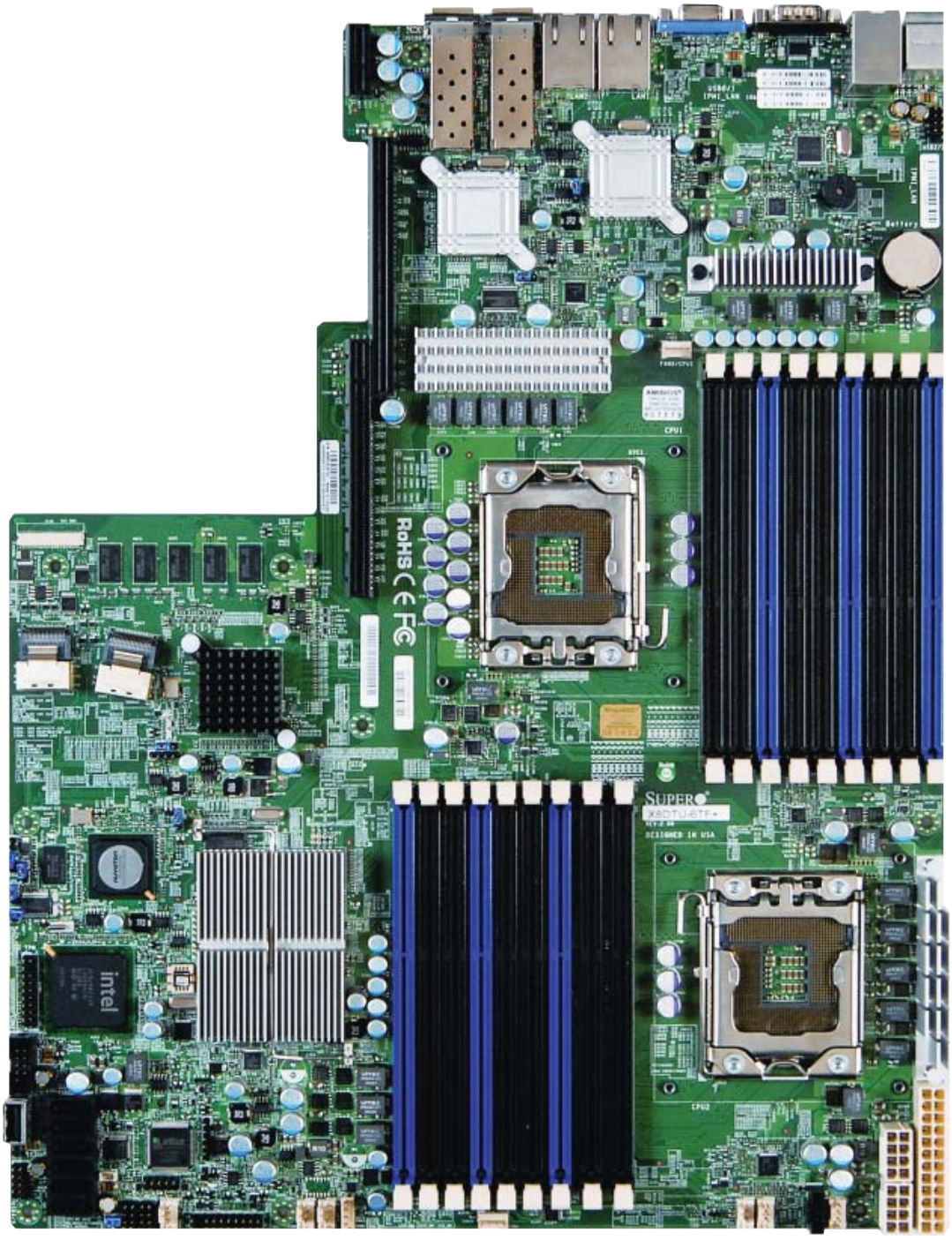
Congratulations on purchasing your computer motherboard from an acknowledged leader in the industry. Supermicro boards are designed with the utmost attention to detail to provide you with the highest standards in quality and performance.

Please check that the following items have all been included with your motherboard. If anything listed here is damaged or missing, contact your retailer.

The following items are included in the retail box.

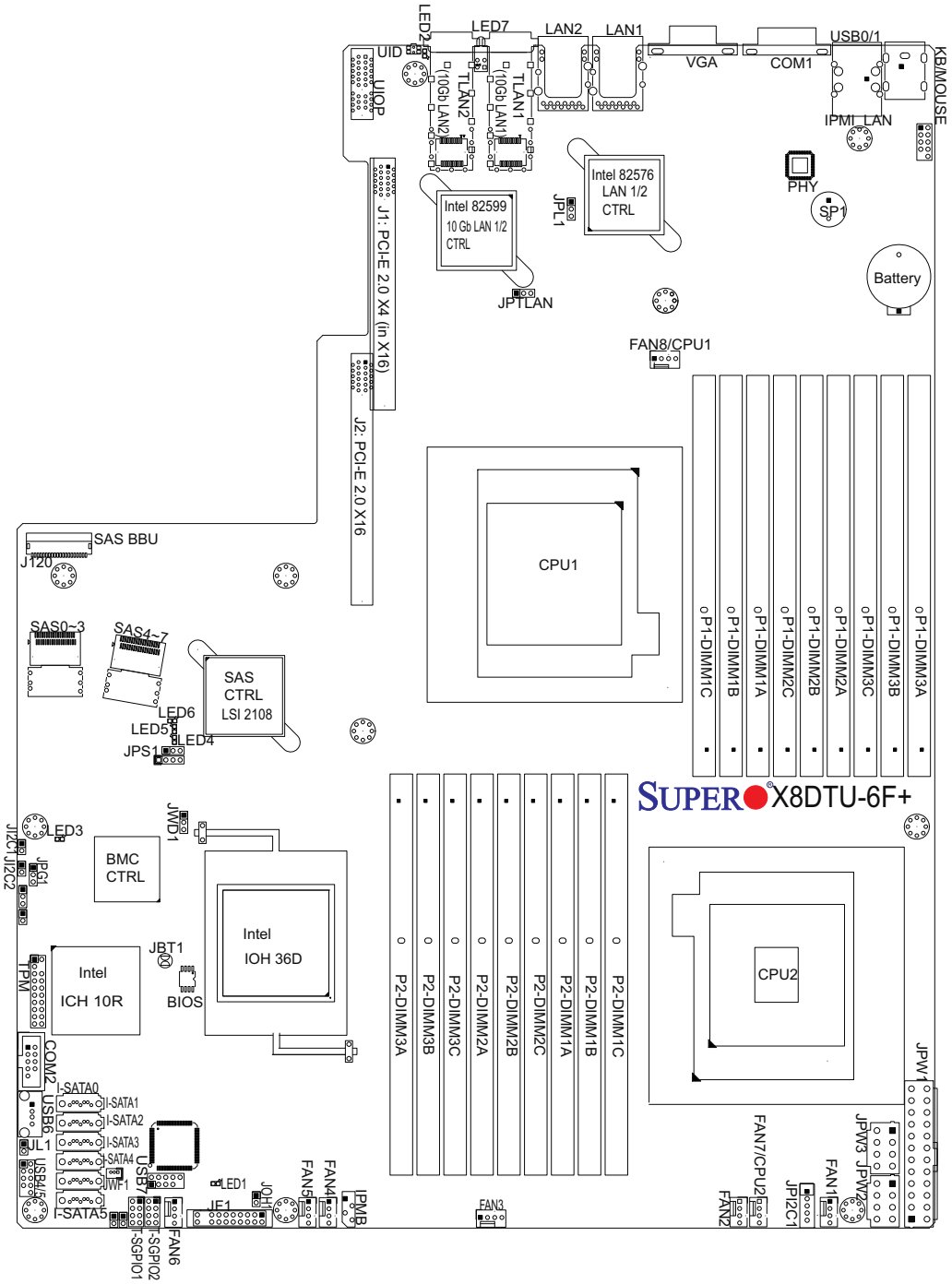
- One (1) Supermicro Mainboard
- One (1) I/O backpanel shield (MCP-260-00038-0N)
- One (1) Supermicro CD containing drivers and utilities
- One (1) User's/BIOS Manual (MNL#1188)

SUPER® Motherboard Image



Note: All graphics shown in this manual were based upon the latest PCB Revision available at the time of publishing of the manual. The motherboard you've received may or may not look exactly the same as the graphics shown in this manual.

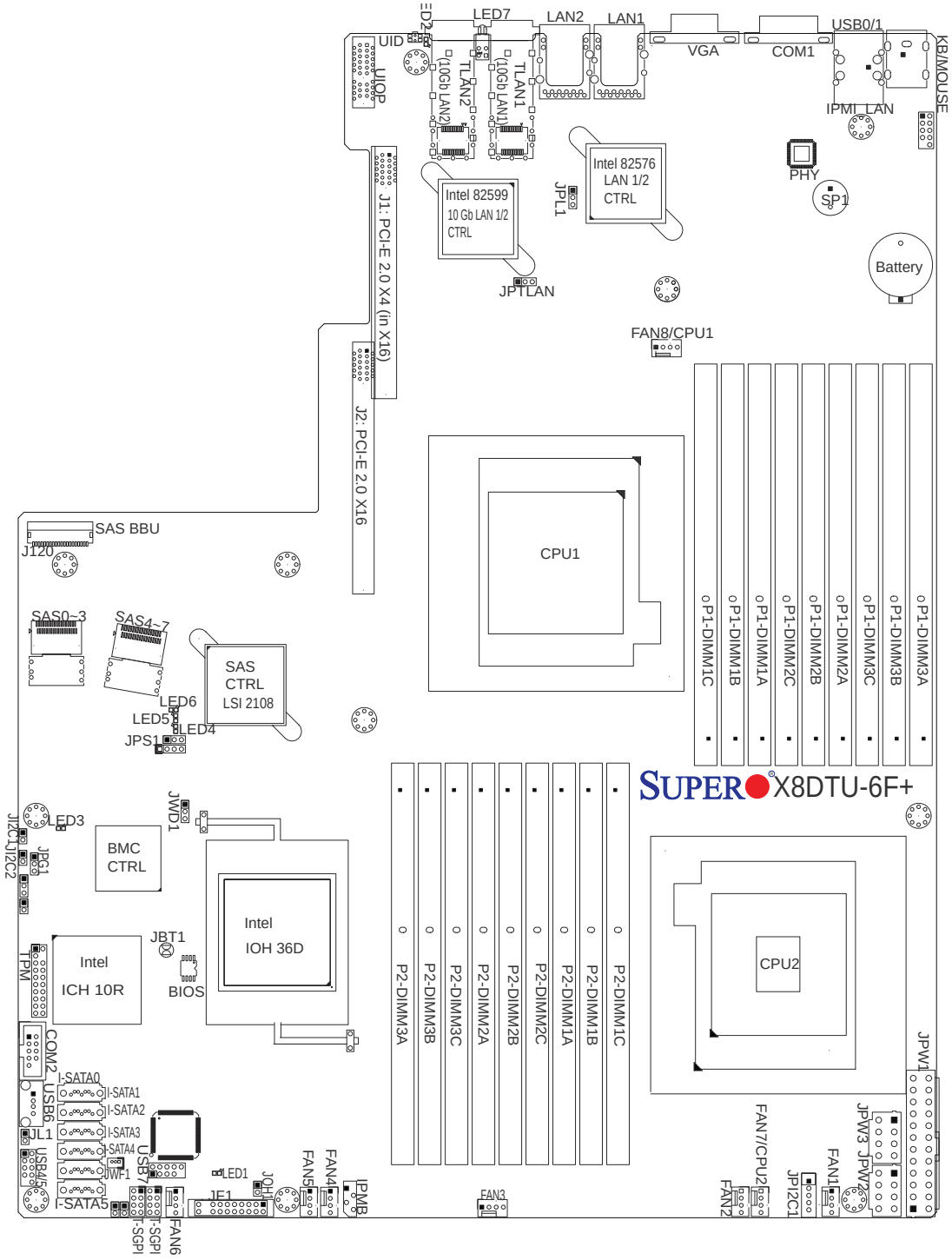
Motherboard Layout



Notes

- TLAN (10 Gb LAN) Ports 1 &2 are available on the X8DTU-6TF+ only.
- IPMI 2.0 support is available on the motherboard. For more information, refer to the user guide posted on our website @ http://www.supermicro.com/support/manuals/

X8DTU-6F+/X8DTU-6TF+ Quick Reference



Notes:

- "■" indicates the location of "Pin 1".
- Jumpers not indicated are for testing only.
- When LED1 (Onboard Power LED Indicator) is on, system power is on. Unplug the power cable before installing or removing any components.

X8DTU-6F+/X8DTU-6TF+ Jumpers

Jumper	Description	Default Setting
JBT1	Clear CMOS	See Chapter 3
JI²C1/JI²C2	SMB to PCI-E Slots	Off (Disabled)
JPG1	VGA Enable	Pins 1~2 (Enabled)
JPL1	(G-bit) LAN1/LAN2 Enable	Pins 1-2 (Enabled)
JPS1	SAS Enable	Pins 1-2 (Enabled)
JPTLAN	(10G-bit) TLAN1/2 Enable (for X8DTU -6TF+)	Pins 1-2 (Enabled)
JWD1	Watch Dog	Pins 1~2 (Reset)

X8DTU-6F+/X8DTU-6TF+ Connectors

Connectors	Description
Battery	Onboard Battery
COM1/COM2	COM1/COM2 Serial Connections
FAN 1~8	CPU//System Fan Headers (Fans 7, 8: CPU Fans)
IPMB	4-pin External BMC I²C Header (for an IPMI Card)
I-SATA 0~5	Intel SB SATA Connectors 0~5
JF1	Front Panel Control Header
J1	PCI-Express 2.0 x4 in x16 Slot
J2	PCI-Express 2.0 x16 Slot
JL1	Chassis Intrusion
JOH1	Overheat/Fan Fail LED
JPI²C1	Power Supply SMBbus I²C Header
JPW1	ATX 24-Pin Power Connector (See Warning on Pg. 2-6.)
JPW2/JPW3	12V 8-Pin Power Connectors (See Warning on Pg. 2-6.)
JPTM1	Trusted Platform Support Header (JPTM1)
JWF1	SATA DOM (Disk_On_Module) Power
KB/MS	PS2 Keyboard/Mouse
LAN1/LAN2	G-bit Ethernet Ports 1/2
TLAN1/TLAN2	10 G-bit Ethernet Ports 1/2 (for X8DTU -6TF+)
IPMI_LAN	IPMI_Dedicated LAN
SAS 0~3, 4~7	SAS (Serial_ Attached SCSI) Connectors
SAS BBU (J120)	SAS Battery-Backup Unit Connector (Part# BTR-0018L-0000-LSI)
SP1	Onboard Buzzer (Internal Speaker)
T-SGPIO 1/2	Serial General Purpose I/O Headers
USB 0/1	Back Panel USB 0/1

USB 4/5	Front-panel accessible USB Connections
USB 6	Type A USB Embedded Drive Connector
USB 7	USB Embedded Drive Connector
UID	UID (Unit Identifier) Switch
UIOP	Universal I/O Add-on Card Power Header (See the Warning below.)
VGA	VGA Port

X8DTU-6F+/X8DTU-6TF+ LED Indicators

LED	Description	State	Status
LED 1	Power LED	Green: On	PWR On
LED 2	UID LED	Blue: Solid On (from UID Switch), Blinking (from IPMI)	Unit Identified
LED 3	BMC Heartbeat LED	Green: Blinking	BMC Normal
LED 4	SAS Activity LED	Blinking	SAS Active
LED 5	SAS Heartbeat LED	Blinking	SAS Normal
LED 6	SAS Error LED	On	SAS Errors Occurred
LED7	10Gb LAN Dual-port LED (Up: TLAN1, Bottom: TLAN2)	10Gb Link: Green On 10Gb Active: Green Blinks 1Gb Link: Yellow On 1Gb Active: Yellow Blinks	

Warnings!

- To avoid damaging the power supply or motherboard, please use a power supply that contains a 24-pin and two 8-pin power connectors. Be sure to connect these connectors to the 24-pin (JPW1) and the two 8-pin (JPW2,JPW3) power connectors on the motherboard. Failure to do so will void the manufacturer warranty on your power supply and motherboard.

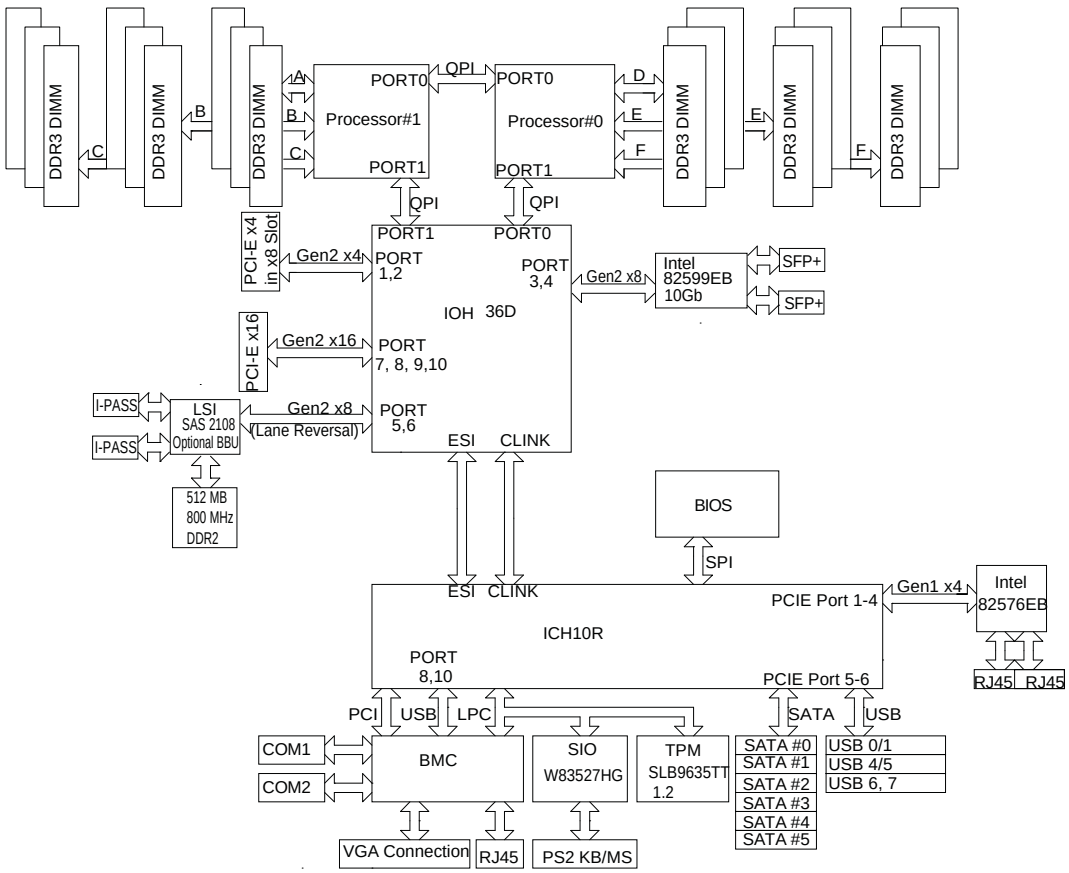
- To provide adequate power to the add-on cards installed on the motherboard, please connect the UIOP PWR connector to the power supply for these cards to work properly.

Motherboard Features

CPU	• Two Intel® 5500/5600 Series (LGA 1366) processors; each processor supports two full-width Intel Quick-Path Interconnect (QPI) links with a total of up to 51.2 GT/s Data Transfer Rate (6.4 GT/s per direction)	
Memory	• 18 240-pin, DDR3 1333/1066/800 MHz SDRAM DIMM sockets in three-channel memory bus. • Support for up to 192 GB of Registered ECC or 48 GB of Unbuffered ECC/Non-ECC DDR3 memory	
	DIMM Sizes	
	• UDIMM	1 GB, 2 GB, and 4GB
	• RDIMM	1 GB, 2GB, 4GB, 8GB, 16GB
Chipset	• Intel® 5520 Chipset (IOH-36D & ICH10R)	
Expansion Slots	• One (1) PCI Express 2.0 x16 slot (J2)	
	• One (1) PCI Express2.0 x4 in x16 slot (J1)	
Graphics	• Winbond BMC Video Controller (Matrox G200eW)	
Network	• One Intel 82576EB Gigabit (10/100/1000 Mb/s) Ethernet Dual-Channel Controller for LAN 1/LAN 2 ports • One Intel 82599 10 Gigabit Ethernet Dual-Channel Controller for TLAN 1/2 ports with two Small_Form-Factor Pluggable Transceivers (SFPs) (X8DTU-6TF+ only)	
	• Single Realtek RTL8201N PHY to support IPMI_LAN 2.0	
I/O Devices	**SATA Connections**	
	• SATA Ports	Six (6)
	• RAID (Windows)	RAID 0, 1, 5, 10
	• RAID (Linux)	RAID 0, 1, 10
	SAS Connections	
	• SAS Ports	Eight (8)
	• RAID	RAID 0, 1, 10, 5, 6, 50, 60
	Integrated IPMI 2.0	
	• IPMI 2.0 supported by the WPCM450 BMC	

	Keyboard/Mouse
	• PS/2 Keyboard/Mouse ports on the I/O backplane
	Serial (COM) Ports
	• Two (2) Fast UART 16550 Connections: one 9-pin RS-232 port and one header
	Super I/O
	• Winbond Super I/O 83527HG
Peripheral Devices	**USB Devices**
	• Two (2) USB ports on the rear I/O panel (USB 0/1)
	• One (1) Type A connector (USB 6) • Two Front Panel Accessible USB connections (USB 4, 5) • One Embedded USB drive connector (USB7)
BIOS	• 32 Mb SPI AMI BIOS® SM Flash BIOS
	• APM 1.2, PCI 2.3, ACPI 1.0/2.0/3.0, USB Keyboard, Plug & Play (PnP) and SMBIOS 2.5
Power Config.	• ACPI/ACPM Power Management
	• Main switch override mechanism
	• Power-on mode for AC power recovery
PC Health Monitoring	**CPU Monitoring**
	• Onboard voltage monitors for CPU core, +3.3V, +5V, +12V, +3.3V Stdby, +5V Stdby, VBAT, Memory, Chipset
	• CPU 6-Phase switching voltage regulator
	• CPU/System overheat LED and control
	• CPU Thermal Trip support
	• Thermal Monitor 2 (TM2) support
	Fan Control
	• Fan status monitoring with firmware 4-pin (Pulse Width Modulation) fan speed control
	• Low noise fan speed control
System Management	• PECI (Platform Environment Configuration Interface) 2.0 support
	• System resource alert via Supero Doctor III
	• SuperoDoctor III, Watch Dog, NMI
	• Chassis Intrusion Header and Detection
Dimensions	• 16.50" (L) x 12.80" (W) (419.10 mm x 325.12 mm)

Note: For IPMI Configuration Instructions, please refer to the Embedded IPMI Configuration User's Guide available @ http://www.supermicro.com/support/manuals/.



System Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the Motherboard Features pages for the actual specifications of each motherboard.

2-2 Chipset Overview

Built upon the functionality and the capability of the Intel 5520 platform, the X8DTU-6F+/X8DTU-6TF+ motherboard provides the performance and feature sets required for dual-processor-based high-end systems HPC/Cluster platforms. The 5520 platform consists of the 5500/5600 Series (LGA 1366) processor, the IOH-36D (IOH Hub), and the ICH10R (South Bridge). With the Intel QuickPath interconnect (QPI) controller built in, the 5500/5600 Series Processor is the first dual-processing platform that offers the next generation point-to-point system interconnect interface, greatly enhancing system performance by utilizing serial link interconnections which allows for increased bandwidth and scalability.

The IOH connects to each processor through an independent QuickPath Interconnect (QPI) link. Each link consists of 20 pairs of unidirectional differential lanes for data transmission in addition to a differential forwarded clock. A full-width QPI link pair provides 84 signals. Each processor supports two QuickPath links, one going to the other processor and the other to the 5520 IO Hub.

The 5520 chipset supports up to 36 PCI Express Gen2 lanes, peer-to-peer read and write transactions. The ICH10R provides up to six PCI-Express ports, six SATA ports and six USB connections.

In addition, the 5520 chipset also offers a wide range of RAS (Reliability, Availability and Serviceability) features. These features include memory interface ECC, x4/x8 Single Device Data Correction (SDDC), Cyclic Redundancy Check (CRC), parity protection, out-of-band register access via SMBus, memory mirroring, and Hot-plug support on the PCI-Express Interface.

Main Features of the 5500/5600 Series Processor and the 5520 Chipset

- Four processor cores in each processor with 8MB shared cache among cores
- Two full-width Intel QuickPath interconnect (QPI) links, up to 6.4 GT/s of data transfer rate in each direction
- Virtualization Technology, Integrated Management Engine supported
- Point-to-point cache coherent interconnect, fast/narrow unidirectional links, and concurrent bi-directional traffic
- Error detection via CRC and error correction via Link-level retry

2-3 Special Features

Recovery from AC Power Loss

The Basic I/O System (BIOS) provides a setting for you to determine how the system will respond when AC power is lost and then restored to the system. You can choose for the system to remain powered off (in which case you must press the power switch to turn it back on), or for it to automatically return to a power-on state. See the Advanced BIOS Setup section to change this setting. The default setting is **Last State**.

2-4 PC Health Monitoring

This section describes the PC health monitoring features of the motherboard. All have an onboard System Hardware Monitor chip that supports PC health monitoring. An onboard voltage monitor will scan these onboard voltages continuously: CPU1 Vcore, CPU2 Vcore, 1.5V, 5V, 5VSB, 12V, 3.3Vcc, 3.3VSB, VBAT and Vtt. Once a voltage becomes unstable, a warning is given or an error message is sent to the screen. The user can adjust the voltage thresholds to define the sensitivity of the voltage monitor.

Fan Status Monitor with Firmware Control

The PC health monitor can check the RPM status of the cooling fans. The onboard CPU and chassis fans are controlled by Thermal Management via BIOS (under the Hardware Monitoring section in the Advanced Setting).

Environmental Temperature Control

The thermal control sensor monitors the CPU temperature in real time and will turn on the thermal control fan whenever the CPU temperature exceeds a user-defined threshold. The overheat circuitry runs independently from the CPU. Once it detects that the CPU temperature is too high, it will automatically turn on the thermal fan control to prevent the CPU from overheating. The onboard chassis thermal circuitry can monitor the overall system temperature and alert the user when the chassis temperature is too high.

Note: To avoid possible system overheating, please be sure to provide adequate airflow to your system.

System Resource Alert

This feature is available when used with Supero Doctor III in the Windows OS

environment or used with Supero Doctor II in Linux. Supero Doctor is used to notify the user of certain system events. For example, you can also configure Supero Doctor to provide you with warnings when the system temperature, CPU temperatures, voltages and fan speeds go beyond a predefined range.

2-5 ACPI Features

ACPI stands for Advanced Configuration and Power Interface. The ACPI specification defines a flexible and abstract hardware interface that provides a standard way to integrate power management features throughout a PC system, including its hardware, operating system and application software. This enables the system to automatically turn on and off peripherals such as CD-ROMs, network cards, hard disk drives and printers.

In addition to enabling operating system-directed power management, ACPI also provides a generic system event mechanism for Plug and Play and an operating system-independent interface for configuration control. ACPI leverages the Plug and Play BIOS data structures, while providing a processor architecture-independent implementation that is compatible with the Windows 2003, Windows XP, Windows Vista and Windows 2008 Operating Systems.

Slow Blinking LED for Suspend-State Indicator

When the CPU goes into a suspend state, the chassis power LED will start blinking to indicate that the CPU is in suspend mode. When the user presses any key, the CPU will "wake up" and the LED will automatically stop blinking and remain on.

2-6 Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates.

The X8DTU-6F+/X8DTU-6TF+ motherboard accommodates 24-pin ATX power supplies. Although most power supplies generally meet the specifications required by the CPU, some are inadequate. In addition, two 12V 8-pin power connections are also required to ensure adequate power supply to the system. Also your power supply must supply 1.5A for the Ethernet ports.

Warning! 1. To avoid damaging the power supply or motherboard, please use a power supply that contains a 24-pin and two 8-pin power connectors. Be sure to connect these connectors to the 24-pin (JPW1) and the two 8-pin (JPW2, JPW3) power connectors on the motherboard. Failure to do so will void the manufacturer warranty on your power supply and motherboard.

2. To provide adequate power to the add-on cards installed on the motherboard, please connect the UIOP PWR connector to the power supply.

It is strongly recommended that you use a high quality power supply that meets ATX power supply Specification 2.02 or above. It must also be SSI compliant. (For more information, please refer to the web site at http://www.ssiforum.org/). Additionally, in areas where noisy power transmission is present, you may choose to install a line filter to shield the computer from noise. It is recommended that you also install a power surge protector to help avoid problems caused by power surges.

2-7 Overview of the Nuvoton WPCM450 Controller

The Nuvoton WPCM450 Controller is a Baseboard Management Controller (BMC) that supports the 2D/VGA-compatible Graphics Core with PCI interface, Virtual Media, and Keyboard/Video/Mouse Redirection (KVMR) modules.

The WPCM450 interfaces with the host system via a PCI interface to communicate with the Graphics core. It supports USB 2.0 and 1.1 for remote keyboard/mouse/virtual media emulation. It also provides LPC interface to control Super IO functions. The WPCM450 is connected to the network via an external Ethernet PHY module.

The Nuvoton WPCM450 Controller also supports two high-speed, 16550 compatible serial communication ports (UARTs). Each UART includes a 16-byte send/receive FIFO, a programmable baud rate generator, complete modem control capability and a processor interrupt system. Both UARTs provide legacy speed with baud rate of up to 115.2 Kbps and an advanced speed with baud rates of 250 K, 500 K, or 1 Mb/s, which support higher speed modems.

The WPCM450 communicates with onboard components via six SMBus interfaces, fan control, and Platform Environment Control Interface (PECI) buses.

Note: For more information on IPMI configuration, please refer to the Embedded IPMI User's Guide posted on our website @ http://www.supermicro.com/support/manuals/.

2-8 Super I/O

The Super I/O chip (Winbond W83527HG) provides functions that comply with ACPI (Advanced Configuration and Power Interface), which includes support of legacy and ACPI power management through an SMI or SCI function pin.

Chapter 3

Installation

3-1 Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To avoid damaging your system board, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the board by its edges only; do not touch its components, peripheral chips, memory modules, or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure that your system chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Use the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Unpacking

The motherboard is shipped in antistatic packaging to prevent static damage. When unpacking the board, make sure that the person handling it is static protected.

3-2 Processor and Heatsink Installation

When handling the processor package, avoid placing direct pressure on the label area of the fan.

Notes:

1. Always connect the power cord last, and always remove it before adding, removing, or changing any hardware components. Make sure that you install the processor into the CPU socket before installing the CPU heatsink.

2. Make sure to install the motherboard into the chassis before installing the CPU heatsink and heatsink fans.

3. When purchasing a motherboard without a 5500/5600 Series processor pre-installed, make sure that the CPU socket plastic cap is in place, and none of the CPU socket pins are bent; otherwise, contact the retailer immediately.

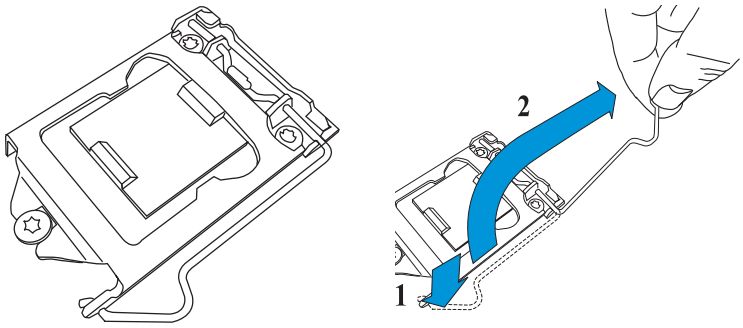
4. Refer to the Motherboard Features Section for more details on CPU support.

Installing an LGA 1366 Processor

1. Press the socket clip to release the load plate, which covers the CPU socket, from its locking position.

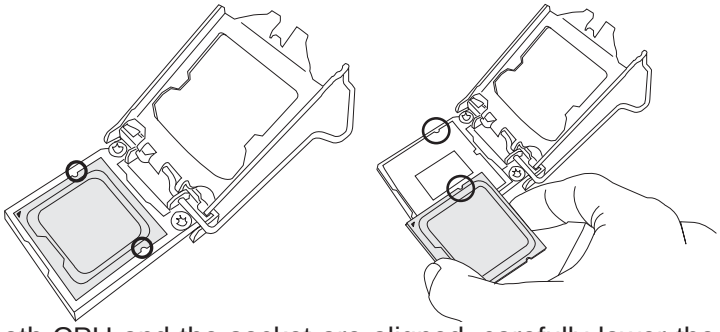
2. Gently lift the socket clip to open the load plate.

3. Hold the plastic cap at its north and south center edges to remove it from the CPU socket.



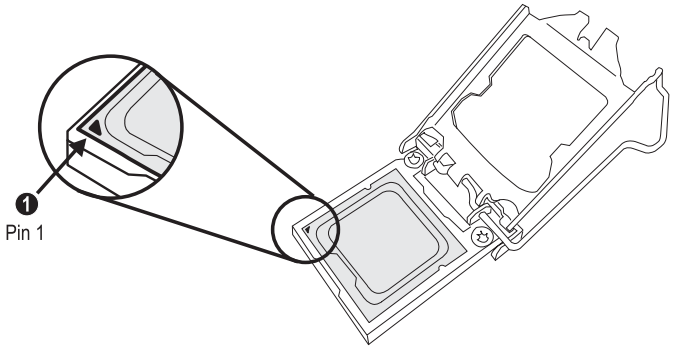
4. After removing the plastic cap, using your thumb and the index finger, hold the CPU at the north and south center edges.

5. Align the CPU key, the semi-circle cutout, against the socket key which is the notch below the gold color dot on the side of the socket.



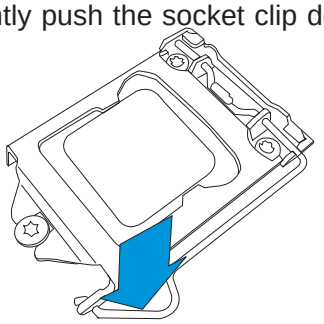
6. Once both CPU and the socket are aligned, carefully lower the CPU straight down into the socket. (To avoid damaging the CPU or the socket, do not rub the CPU against the surface of the socket or its pins.)

7. With the CPU inside the socket, inspect the four corners of the CPU to make sure that the CPU is properly installed.



8. Once the CPU is securely seated on the socket, lower the CPU load plate to the socket.

9. Use your thumb to gently push the socket clip down to the clip lock.



Warning: Be sure to save the plastic cap. The motherboard must be shipped with the plastic cap properly installed to protect the CPU socket pins. Shipment without the plastic cap properly installed will cause damage to the socket pins.

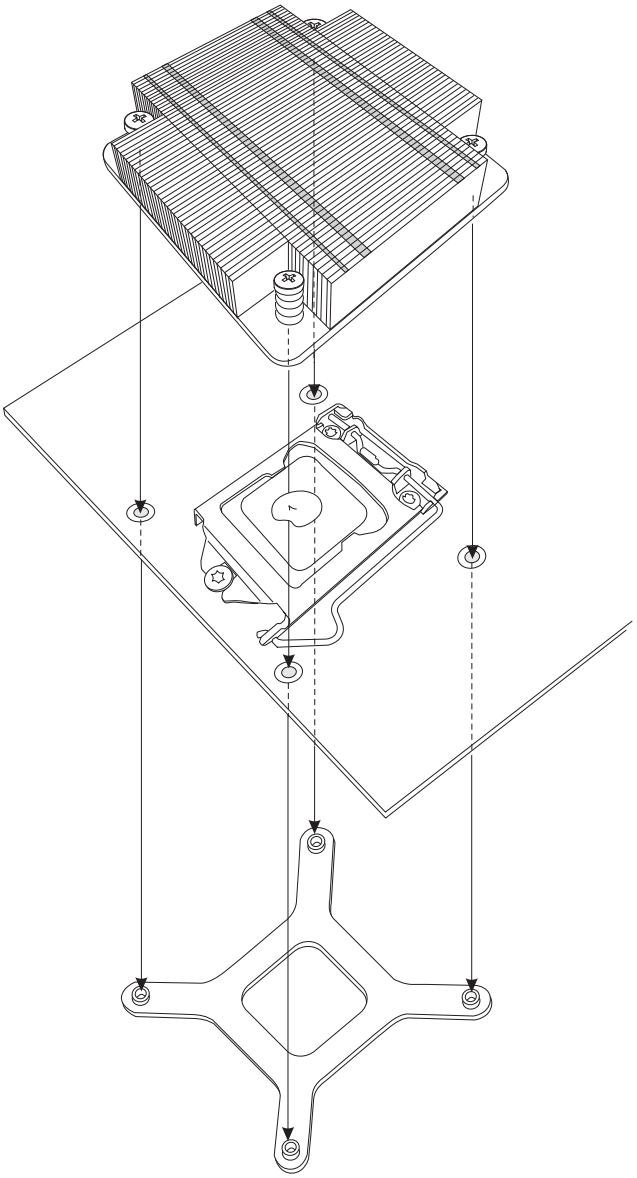
Installing a Passive CPU Heatsink

1. Do not apply any thermal grease to the heatsink or the CPU die because the required amount has already been applied.

2. Place the heatsink on top of the CPU, making sure that the four mounting holes are aligned with those on the retention mechanism.

3. Install two diagonal screws (e.g. the #1 and the #2 screws) and tighten them until snug (Do not fully tighten the screws to avoid possible damage to the CPU.)

4. Finish the installation by fully installing all screws.



Removing the Passive Heatsink

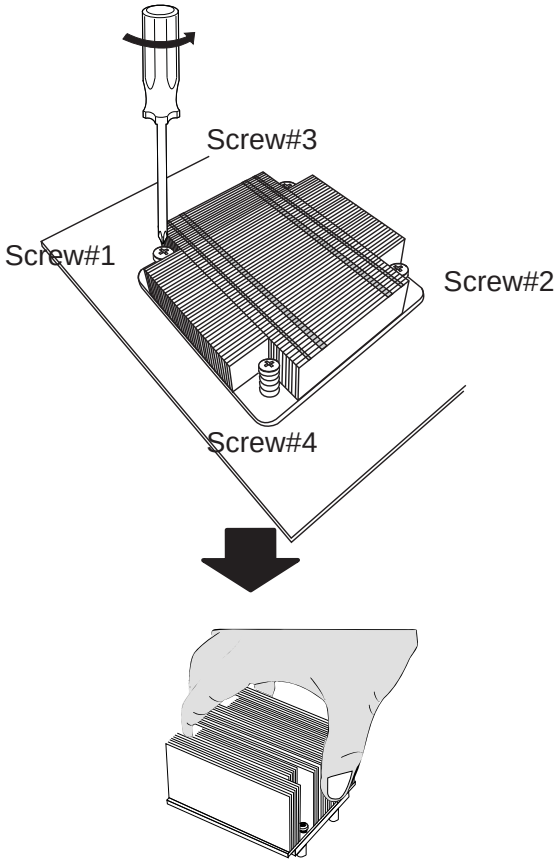
Warning: We do not recommend that the CPU or the heatsink be removed. However, if you do need to remove the heatsink, please follow the instructions below to uninstall the heatsink to avoid damaging the CPU or other components.

1. Unplug the power cord from the power supply.

2. Disconnect the heatsink fan wires from the CPU fan header.

3. Using a screwdriver, remove the heatsink screws from the motherboard in the sequence as show in the picture below.

4. Hold the heatsink as shown in the picture below and gently wriggle the heatsink to loosen it from the CPU, avoiding using excessive force while doing so.



5. Once the CPU is loosened, remove the heatsink from the CPU socket.

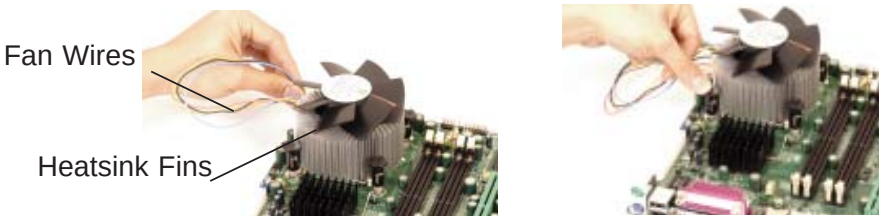
6. To reinstall the CPU and the heatsink, clean the surface of the CPU and the heatsink to get rid of the old thermal grease. Reapply the proper amount of thermal grease on the surface before reinstalling them on the motherboard.

Installing an Active Heatsink

1. Locate the CPU Fan power connector on the motherboard. (Refer to the motherboard layout in Chapter 2 for the CPU Fan location.)

2. Position the heatsink in the way that the heatsink fan wires are closest to the CPU fan power connector and do not interfere with other components.

3. Inspect the CPU Fan wires to make sure that the wires are routed through the bottom of the heatsink.



4. Remove the thin layer of the protective film from the copper core of the heatsink.

(**Warning**! CPU overheat may occur if the protective film is not removed from the heatsink.)

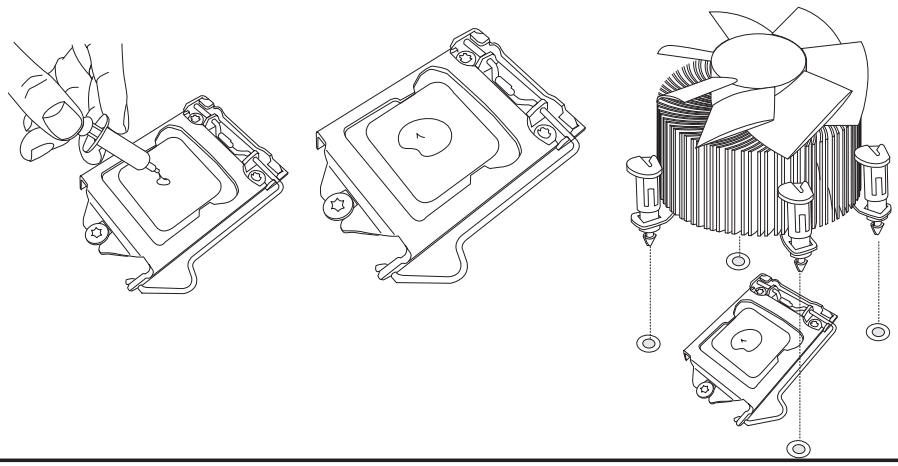
5. Apply the proper amount of thermal grease on the CPU. (**Note**: if your heatsink came with a thermal pad, please ignore this step.)

6. If necessary, rearrange the wires to make sure that the wires are not pinched between the heatsink and the CPU. Also make sure to keep clearance between the fan wires and the fins of the heatsink.

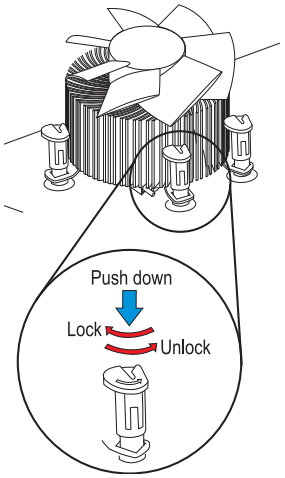
7. Align the four heatsink fasteners with the mounting holes on the motherboard.

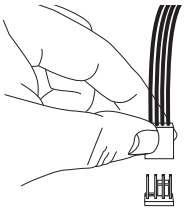
8. Gently push the pairs of diagonal fasteners (#1 & #2, and #3 & #4) into the mounting holes until you hear a click. (**Note**: Make sure to properly orient each fastener so that the narrow end of the groove is pointing outward.)

9. Repeat Step 7 to insert all four heatsink fasteners into the mounting holes.



10. Once all four fasteners are securely inserted into the mounting holes, and the heatsink is properly installed on the motherboard, connect the heatsink fan wires to the CPU fan connector.

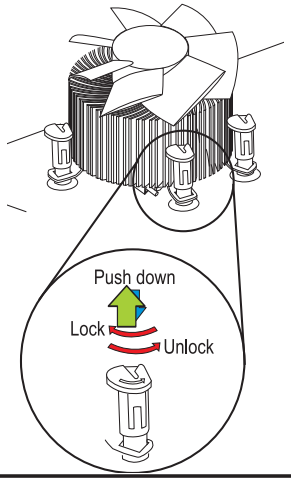


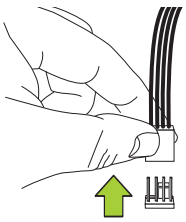


Removing the Active Heatsink

Warning: We do not recommend that the CPU or the heatsink be removed. However, if you do need to remove the heatsink, please follow the instructions below to uninstall the heatsink and avoid damaging the CPU or other components.

1. Unplug the power cord from the power supply.
2. Disconnect the heatsink fan wires from the CPU fan header.
3. Using your finger tips, gently press on the fastener cap and turn it counterclockwise to make a 1/4 (90^0) turn, and then pull the fastener upward to loosen it.
4. Repeat Step 3 to loosen all fasteners from the mounting holes.
5. When all fasteners are loose, remove the heatsink from the CPU.





3-3 Installing and Removing the Memory Modules

Note: Check Supermicro's website for recommended memory modules.

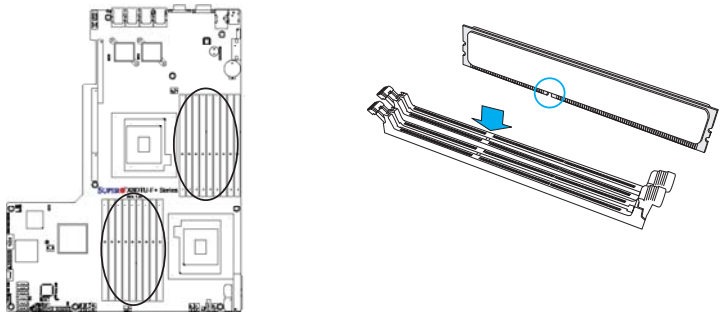
CAUTION

Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

Installing & Removing DIMMs

1. Insert the desired number of DIMMs into the memory slots, starting with P1-DIMM #1A. (For best performance, please use the memory modules of the same type and same speed in the same bank.)

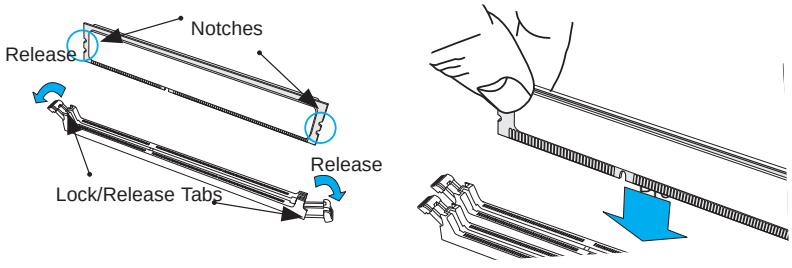
2. Position the DIMM module's bottom key to align it with the receptive point on the slot.



3. Push the Lock/Release tabs to the release positions. Make sure that the side notches of a DIMM module align with the Lock/Release tabs of the slot when pressed in.

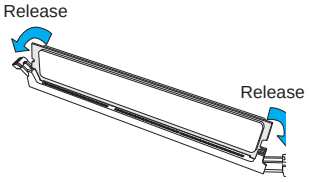
4. Insert the DIMM module vertically and press it down until the module snaps into place.

5. Press the Lock/Release tabs to secure the DIMM module.



Removing Memory Modules

1. Reverse the steps above to remove the DIMM modules from the motherboard.



Memory Support

The X8DTU-6F+/X8DTU-6TF+ Motherboard supports up to 192 GB Registered ECC or up to 48 GB Unbuffered ECC/Non-ECC DDR3 1333 MHz/1066 MHz/800 MHz in 18 DIMMs.

Note: Memory Speed support depends on the type(s) of CPU(s) used.

DIMM Module Population Configuration

For memory to work properly, follow the tables below for memory installation:

Memory Population for Optimal Performance -For a Motherboard with One CPU (CPU1) Installed

P1-DIMMs	**To Populate P1-DIMMs**								
	Branch 0			**Branch 1**			**Branch 2**		
3 DIMMs	P1-1A			P1-2A			P1-3A		
6 DIMMs	P1-1A	P1-1B		P1-2A	P1-2B		P1-3A	P1-3B	
9 DIMMs (RDIMMs only) (**Note**)	P1-1A	P1-1B	P1-1C	P1-2A	P1-2B	P1-2C	P1-3A	P1-3B	P1-3C

Note: Max. of 6 UDIMM modules are supported by a CPU.

Memory Population for Optimal Performance -For a Motherboard with One CPU (CPU2) Installed

P2-DIMMs	**To Populate P2-DIMMs**								
	Branch 0			**Branch 1**			**Branch 2**		
3 DIMMs	P2-1A			P2-2A			P2-3A		
6 DIMMs	P2-1A	P2-1B		P2-2A	P2-2B		P2-3A	P2-3B	
9 DIMMs (RDIMMs only (**Note**)	P2-1A	P2-1B	P2-1C	P2-2A	P2-2B	P2-2C	P2-3A	P2-3B	P2-3C

Note: Max. of 6 UDIMM modules are supported by a CPU.

Memory Population for Optimal Performance -For a Motherboard with Two CPUs Installed

	CPU 1 (To Populate P1-DIMMs)			**CPU 2 (To Populate P2-DIMMs)**		
	Branch 0	**Branch 1**	**Branch 2**	**Branch 0**	**Branch 1**	**Branch 2**
6 DIMMs	P1-1A	P1-2A	P1-3A	P2-1A	P2-2A	P2-3A
12 DIMMs	P1-1A/1B	P1-2A/2B	P1-3A/3B	P2-1A/1B	P2-2A/2B	P2-3A/3B
18 DIMMs (For RDIMMs only) **(Note)**	P1-1A/1B/1C	P1-2A/2B/2C	P1-3A/3B/3C	P2-1A/1B/1C	P2-2A/2B/2C	P2-3A/3B/3C

Note: Max. of 6 UDIMM modules are supported by a CPU.

Memory Support for the Motherboard with the 5500 Processor(s) Installed

RDIMM Population for the Motherboard w/5500 Processors Installed				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**DIMM Type (Reg.= Registered)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Reg. DDR3 ECC	800,1066,1333	SR or DR
3	1	Reg. DDR3 ECC	800,1066	QR
3	2	Reg. DDR3 ECC	800,1066	Mixing SR, DR
3	2	Reg. DDR3 ECC	800 **(Note)**	Mixing SR, DR, QR
3	3	Reg. DDR3 ECC	800 **(Note)**	Mixing SR, DR
Note: 1066 RDIMMs will run at 800 MHz (-BIOS automatic downgrading)				

UDIMM Population for the Motherboard w/5500 Processors Installed				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**DIMM Type (Unb.= Unbuffered)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Unb. DDR3 ECC/Non-ECC	800,1066,1333	SR or DR
3	2	Unb. DDR3 ECC/Non-ECC	800,1066	Mixing SR, DR
3	3	Not available	Not available	Not available

Memory Support for the Motherboard with the 5600 Processor(s) Installed

- 1.5V DIMMs

1.5V RDIMM Population for the Motherboard w/5600 Processors Installed				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**DIMM Type (Reg.=Registered)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Reg. DDR3 ECC	800,1066,1333	SR or DR
3	1	Reg. DDR3 ECC	800,1066 (Note 1)	QR
3	2	Reg. DDR3 ECC	800,1066, 1333	Mixing SR, DR
3	2	Reg. DDR3 ECC	800 (Note 2)	Mixing SR, DR, QR
3	3	Reg. DDR3 ECC	800 (Note 2)	Mixing SR, DR
Note 1: 1333 MHz RDIMMs will run at 1066 MHz (-BIOS automatic downgrading). **Note 2:** 1333/1066 MHz RDIMMs will run at 800 MHz (-BIOS automatic downgrading). **Note 3:** MIxing of 1.35V and 1.5V DIMMs is not recommended.				

1.5V UDIMM Population for the Motherboard w/5600 Processors Installed				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**UDIMM (Unb. DIMM/ Unbuffered DIMM)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Unb. DDR3 ECC/Non-ECC	800,1066,1333	SR or DR
3	2	Unb. DDR3 ECC/Non-ECC	800,1066, 1333	Mixing SR, DR
3	3	Not Available	Not Available	Not Available

Note 1: 1333 MHz for two DIMMs per channel is supported when Unbuf./ECC DIMMs are used.
Note 2: MIxing of 1.35V and 1.5V DIMMs is not recommended.

1.35V DIMMs

1.35V RDIMM Population for the Motherboard w/5600 Processors				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**RDIMM (Reg. DIMM/ Registered DIMM)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Reg. DDR3 ECC	800,1066,1333	SR or DR
3	1	Reg. DDR3 ECC	800 (Note 1)	QR
3	2	Reg. DDR3 ECC	800,1066 (Note 2)	Mixing SR, DR
3	2	Reg. DDR3 ECC	800 (Note 3)	Mixing SR, DR, QR
3	3	Not Available	Not Available	Not Available

Note 1: 1333/1066 MHz QR RDIMMs will run at 800 MHz (-BIOS automatic downgrading).
Note 2: 1333 MHz SR/DR RDIMMs will run at 800 MHz (-BIOS automatic downgrading).
Note 3: 1333/1066 MHz SR/DR/QR RDIMMs will run at 800 MHz (-BIOS automatic downgrading).
Note 4: MIxing of 1.35V and 1.5V DIMMs is not recommended.

1.35V UDIMM Population for the Motherboard w/5600 Processors Installed				
DIMM Slots per Channel	**DIMMs Populated per Channel**	**UDIMM (Unb. DIMM/ Unbuffered DIMM)**	**Speeds (in MHz)**	**Ranks per DIMM (any combination; SR=Single Rank, DR=Dual Rank, QR=Quad Rank)**
3	1	Unb. DDR3 ECC	800,1066,1333	SR or DR
3	2	Unb. DDR3 ECC	800,1066	Mixing SR, DR
3	3	Not Available	Not Available	Not Available

Note 1: 1333 MHz for two DIMMs per channel is supported when Unbuf./ECC DIMMs are used.
Note 2: MIxing of 1.35V and 1.5V DIMMs is not recommended.

Note 1: Due to OS limitations, some operating systems may not show more than 4 GB of memory.

Note 2: Due to memory allocation to system devices, the amount of memory that remains available for operational use will be reduced when 4 GB of RAM is used. The reduction in memory availability is disproportional. (See the following Table.)

Possible System Memory Allocation & Availability

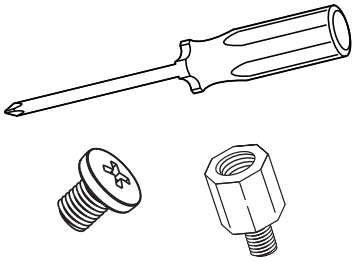
System Device	Size	Physical Memory Remaining (-Available) (4 GB Total System Memory)
Firmware Hub flash memory (System BIOS)	1 MB	3.99 GB
Local APIC	4 KB	3.99 GB
Area Reserved for the chipset	2 MB	3.99 GB
I/O APIC (4 Kbytes)	4 KB	3.99 GB
PCI Enumeration Area 1	256 MB	3.76 GB
PCI Express (256 MB)	256 MB	3.51 GB
PCI Enumeration Area 2 (if needed) -Aligned on 256-MB boundary-	512 MB	3.01 GB
VGA Memory	16 MB	2.85 GB
TSEG	1 MB	2.84 GB
Memory available for the OS & other applications		2.84 GB

3-4 Motherboard Installation

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both motherboard and chassis match. Although a chassis may have both plastic and metal mounting fasteners, metal ones are highly recommended because they ground the motherboard to the chassis. Make sure that the metal standoffs click in or are screwed in tightly. Then use a screwdriver to secure the motherboard onto the motherboard tray.

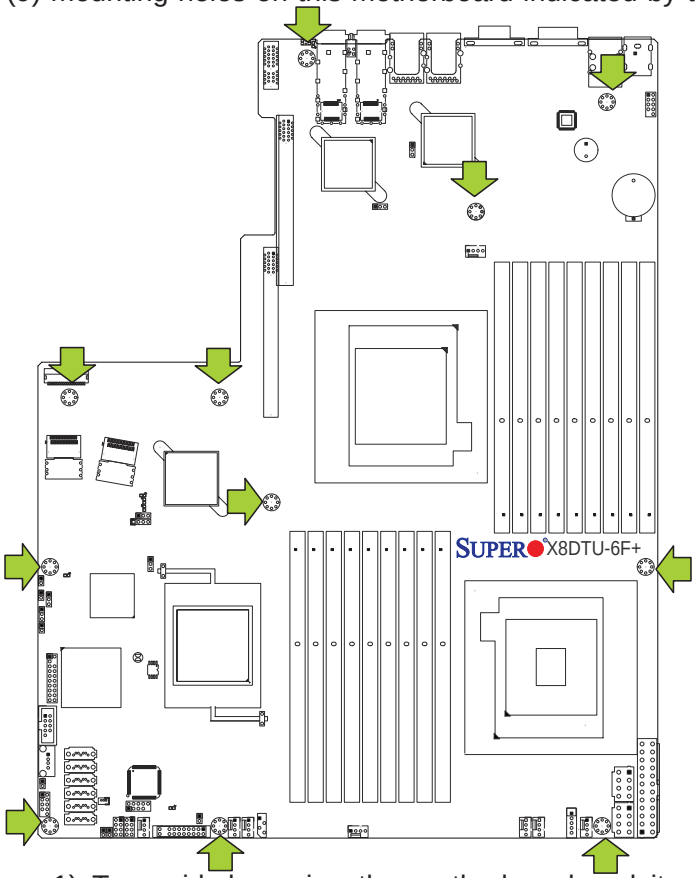
Tools Needed

- Philips Screwdriver
- Pan head screws (9 pieces)
- Standoffs (9 pieces, if needed)



Location of Mounting Holes

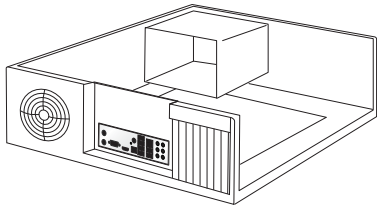
There are nine (9) mounting holes on this motherboard indicated by the arrows.



Caution: 1) To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw when installing the motherboard. 2) Some components are very close to the mounting holes. Please take precautionary measures to avoid damaging the components during motherboard installation.

Installing the Motherboard

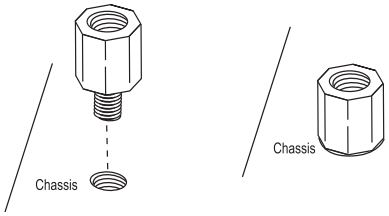
1. Install the I/O shield into the chassis.



2. Locate the mounting holes on the motherboard.

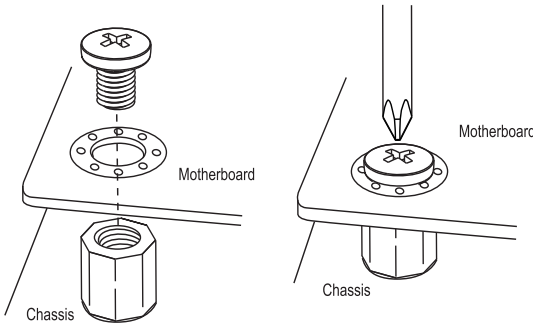
3. Locate the matching mounting holes on the chassis. Align the mounting holes on the motherboard against those on the chassis.

4. Install standoffs in the chassis as needed.



5. Install the motherboard into the chassis carefully to avoid damaging motherboard components.

6. Using the Philips screwdriver, insert a Pan head #6 screw into a mounting hole on the motherboard and its matching mounting hole on the chassis.



7. Repeat Step 5 to insert #6 screws into all mounting holes.

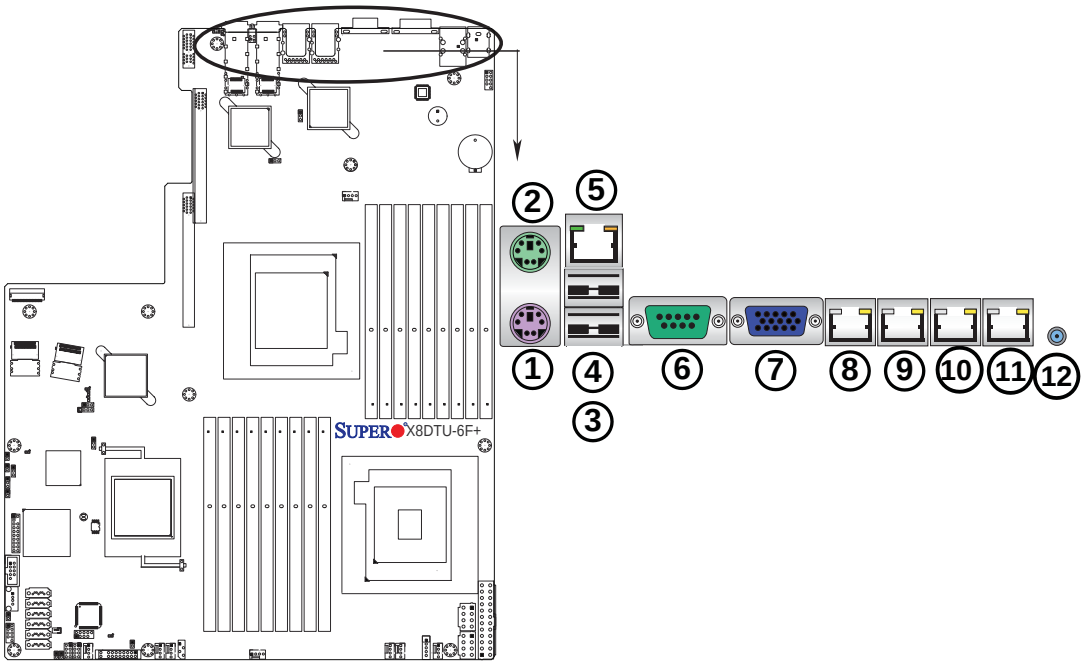
8. Make sure that the motherboard is securely placed in the chassis.

Note: Images displayed are is illustration only. Your chassis or components might look different.

3-5 Control Panel Connectors/I/O Ports

The I/O ports are color coded in conformance with the PC 99 specification. See the picture below for the colors and locations of the various I/O ports.

Back Panel Connectors/I/O Ports



Back Panel I/O Port Locations and Definitions

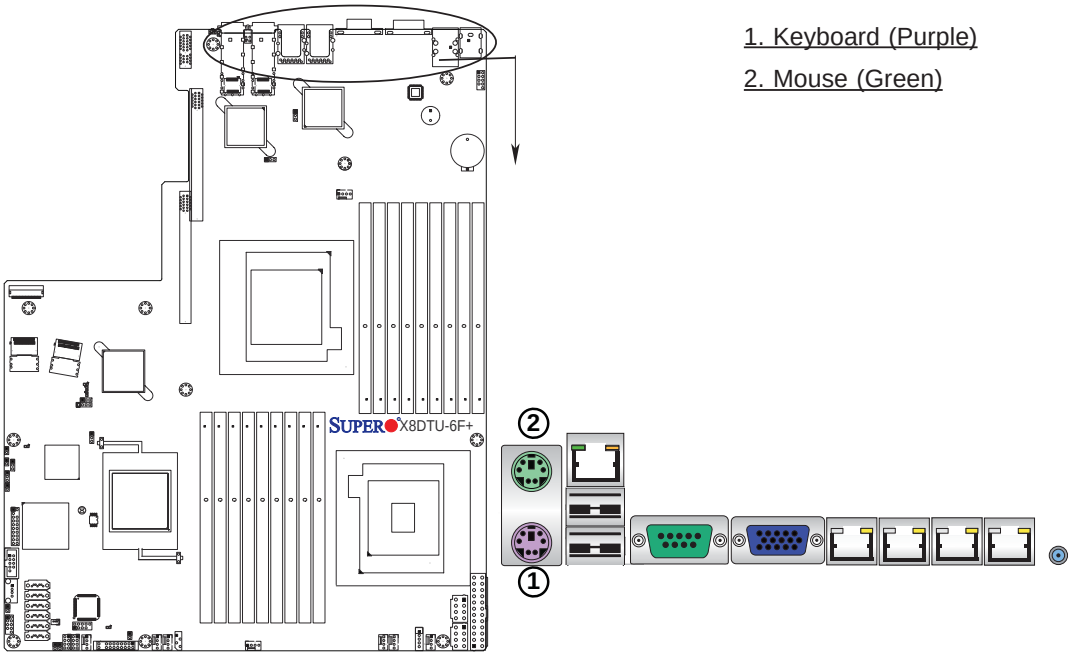
1. Keyboard (Purple)
2. PS/2 Mouse (Green)
3. Back Panel USB Port 0
4. Back Panel USB Port 1
5. IPMI_Dedicated LAN
6. COM Port 1 (Turquoise)
7. VGA1 (Blue)
8. Gigabit LAN 1
9. Gigabit LAN 2
10. 10 Gb TLAN 1 + SFP+ 1 (X8DTU-6TF+ only)
11. 10 Gb TLAN 2 + SFP+ 2 (X8DTU-6TF+ only)
12. UID Switch

ATX PS/2 Keyboard and PS/2 Mouse Ports

The ATX PS/2 keyboard and PS/2 mouse are located next to the Back Panel USB Ports 0~1 on the motherboard. See the table at right for pin definitions.

PS/2 Keyboard/Mouse Pin Definitions

PS2 Keyboard		PS2 Mouse	
Pin#	Definition	Pin#	Definition
1	KB Data	1	Mouse Data
2	No Connection	2	No Connection
3	Ground	3	Ground
4	Mouse/KB VCC (+5V)	4	Mouse/KB VCC (+5V)
5	KB Clock	5	Mouse Clock
6	No Connection	6	No Connection
VCC: with 1.5A PTC (current limit)			



1. Keyboard (Purple)
2. Mouse (Green)

Universal Serial Bus (USB)

Two Universal Serial Bus ports (USB 0/1) are located on the I/O back panel. Additionally, four USB connections (USB 4/5, 6, 7) are on the motherboard to provide internal or front chassis access. (Cables are not included). See the tables on the right for pin definitions.

Backplane USB (USB 0/1)

Pin#	Definition
1	+5V
2	PO-
3	PO+
4	Ground
5	NA

Internal and Front Panel USB Pin Definitions (USB 4/5)

Pin #	Definition	Pin #	Definition
1	+5V	1	+5V
2	PO-	2	PO-
3	PO+	3	PO+
4	Ground	4	Ground
5	Key	5	NC

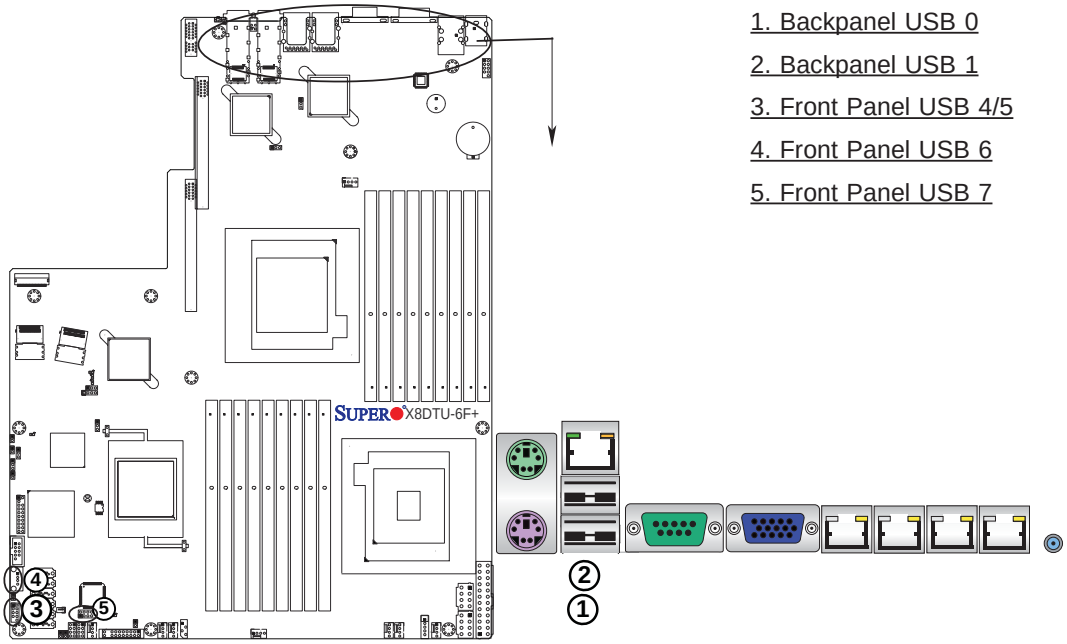
(NC= No connection)

Type A USB (USB 6)

Pin#	Definition
1	Vcc
2	Data-
3	Data+
4	Ground
5	NA

Embedded USB Pin Definitions (USB 7)

Pin #	Definition	Pin #	Definition
1	PWR	2	Ground
3	USBD-	4	Ground
5	USBD+	6	Ground
7	Ground	8	Ground
9	NA	10	Ground



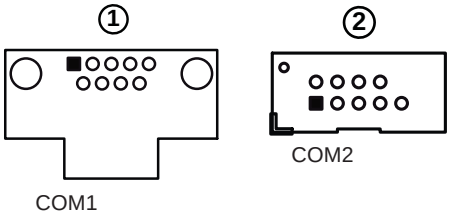
1. Backpanel USB 0
2. Backpanel USB 1
3. Front Panel USB 4/5
4. Front Panel USB 6
5. Front Panel USB 7

Serial Ports

Two COM connections (COM1 & COM2) are located on the motherboard. COM1 is located on the Backplane I/O panel. COM2 is located next to the BMC controller to provide additional serial connection support. See the table on the right for pin definitions.

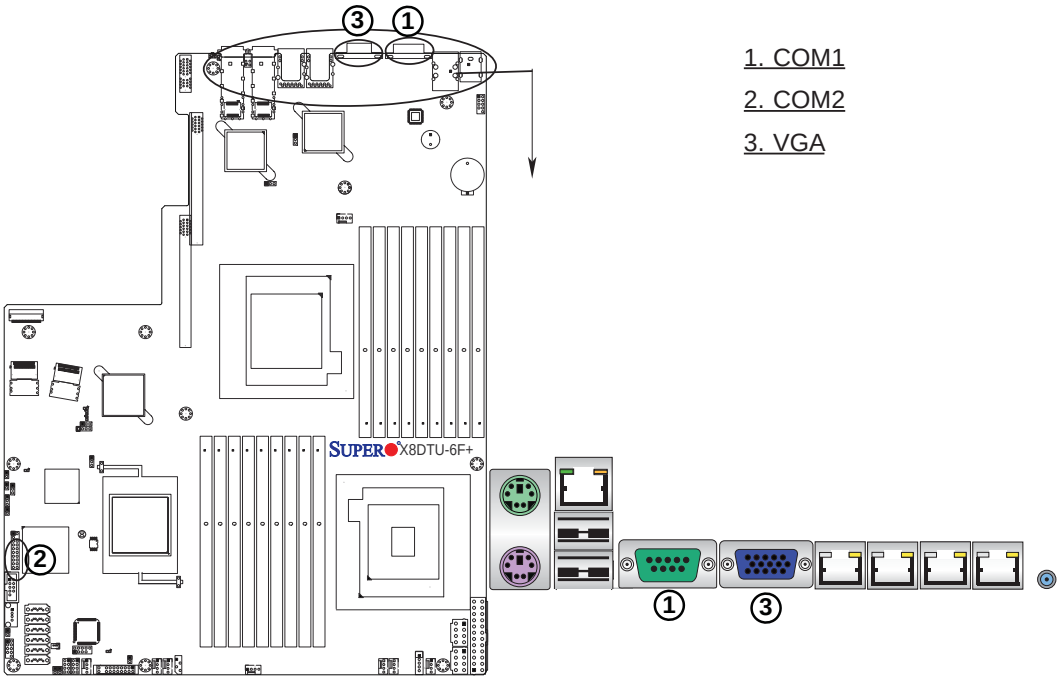
Serial COM) Ports Pin Definitions

Pin #	Definition	Pin #	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	N/A



Video Connector

A Video (VGA) port is located next to COM1 on the I/O backplane to provide video/graphic display connection. Refer to the board layout below for the locations.



1. COM1
2. COM2
3. VGA

Gigabit Ethernet Ports

Two Ethernet ports (LAN1/LAN2) are located on the I/O backplane on the X8DTU-6F+/6TF+. An additional IPMI_Dedicated LAN is located on the motherboard to provide KVM support for IPMI 2.0. All these ports accept RJ45 type cables. (**Note**: Please refer to the LED Indicator Section for LAN LED information.)

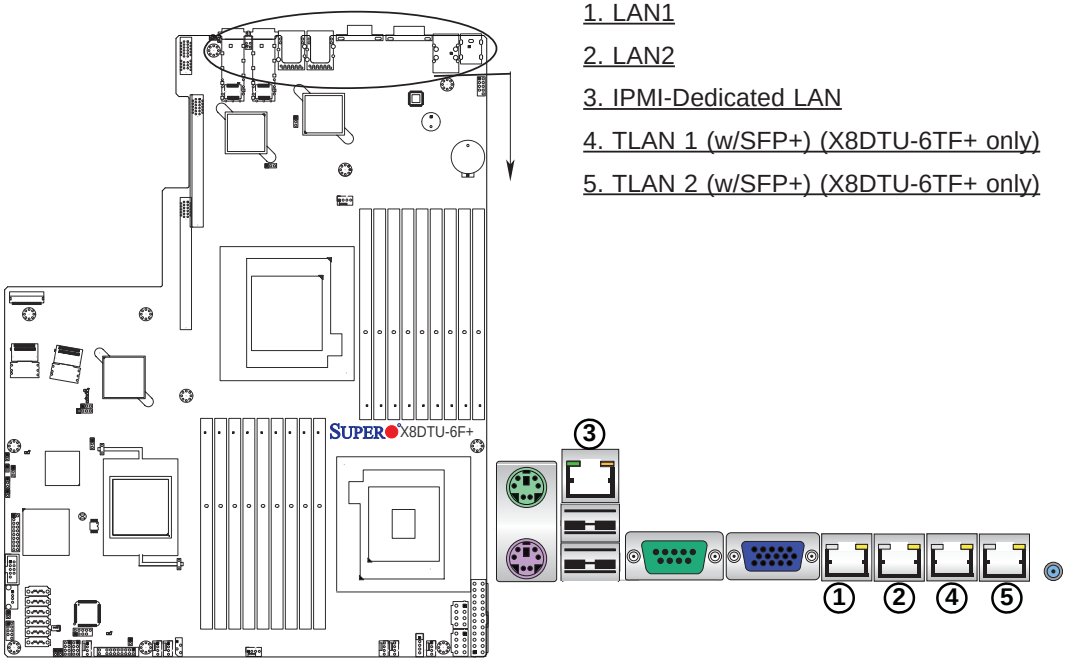
LAN Ports Pin Definition

Pin#	Definition		
1	P2V5SB	10	SGND
2	TD0+	11	Act LED
3	TD0-	12	P3V3SB
4	TD1+	13	Link 100 LED (Yellow, +3V3SB)
5	TD1-	14	Link 1000 LED (Yellow, +3V3SB)
6	TD2+	15	Ground
7	TD2-	16	Ground
8	TD3+	17	Ground
9	TD3-	18	Ground

(NC: No Connection)

10Gb TLAN Ports and SFP+ Devices (X8DTU-6TF+)

Two 10Gb Ethernet ports (TLAN1/2) with Small_Form Factor Pluggable Device support are located at on the I/O backplane on the X8DTU-6TF+. See the layout below for the locations.



1. LAN1
2. LAN2
3. IPMI-Dedicated LAN
4. TLAN 1 (w/SFP+) (X8DTU-6TF+ only)
5. TLAN 2 (w/SFP+) (X8DTU-6TF+ only)

Unit Identifier Switches

Two Unit Identifier (UID) Switches and LED Indicators are located on the motherboard. The Front Panel UID Switch is located at Pin 13 on the Front Control Panel (JF1). The Rear UID Switch is located next to the UIOP Power connector on the rear side of the motherboard. The Front Panel UID LED is located at Pin 7 of JF1, and the Rear UID LED is located at LED2. When you press a UID switch on the front panel or on the back panel, both Rear UID LED and Front Panel UID LED will be turned on. Press the UID switch again to turn off both LED Indicators. These UID Indicators provide easy identification of a system unit that may be in need of service. See the table on the right for pin definitions.

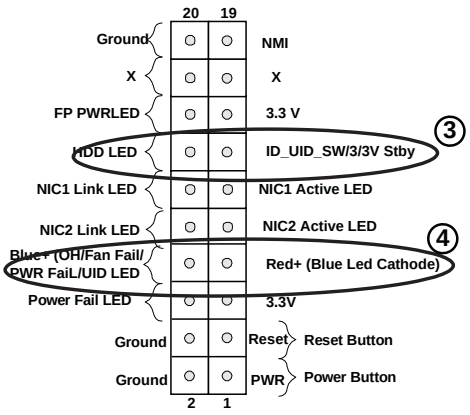
Note: UID LED is supported by a physical switch or the BMC controller. When it is controlled by the physical switch (for a Windows system), it will stay solid. When it is controlled by the BMC (for a Linux system), it will blink.

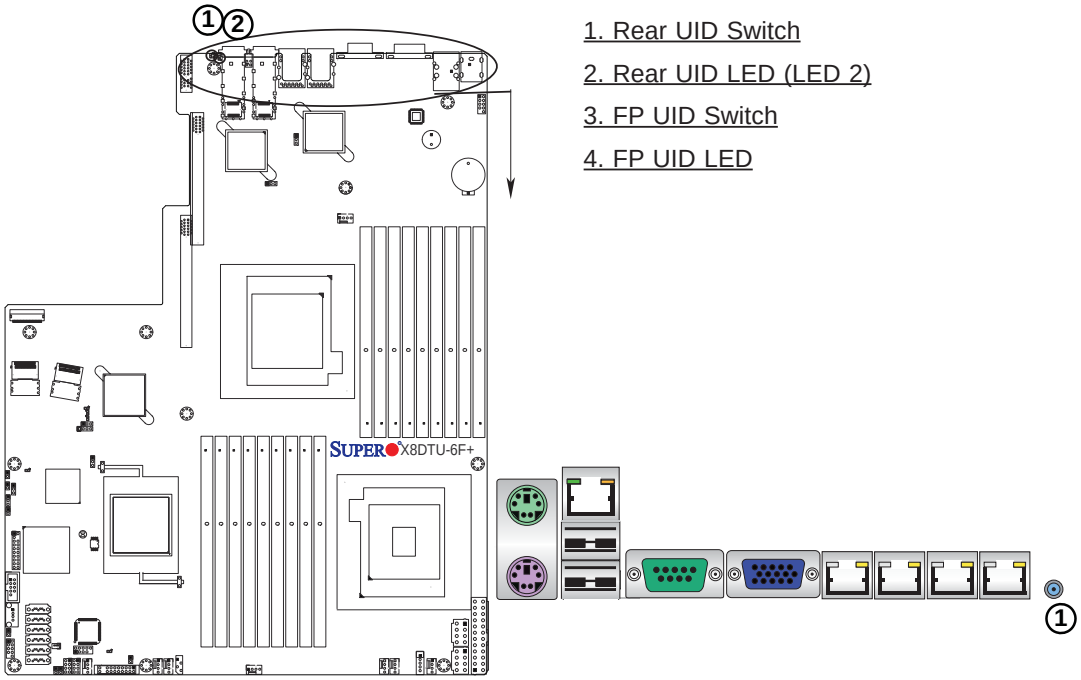
UID Switch (UID) Pin Definitions

Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Ground

UID LED (LED 2) Status

Color/State	OS Status	
Blue: On	Windows OS	Unit Identified
Blue: Blinking	Linux OS	Unit Identified



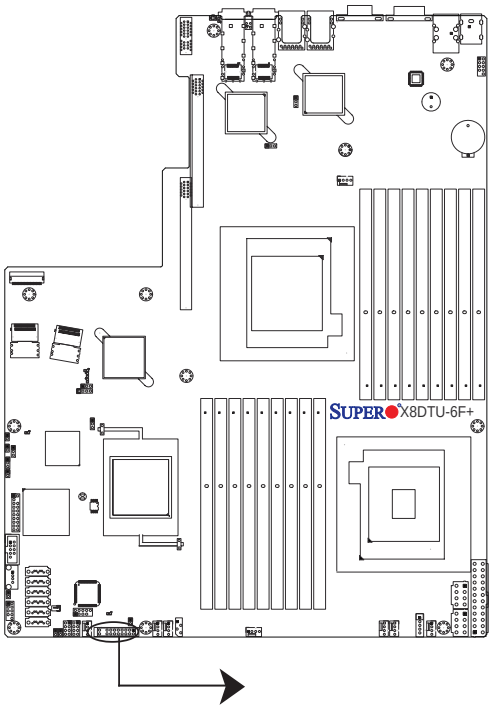


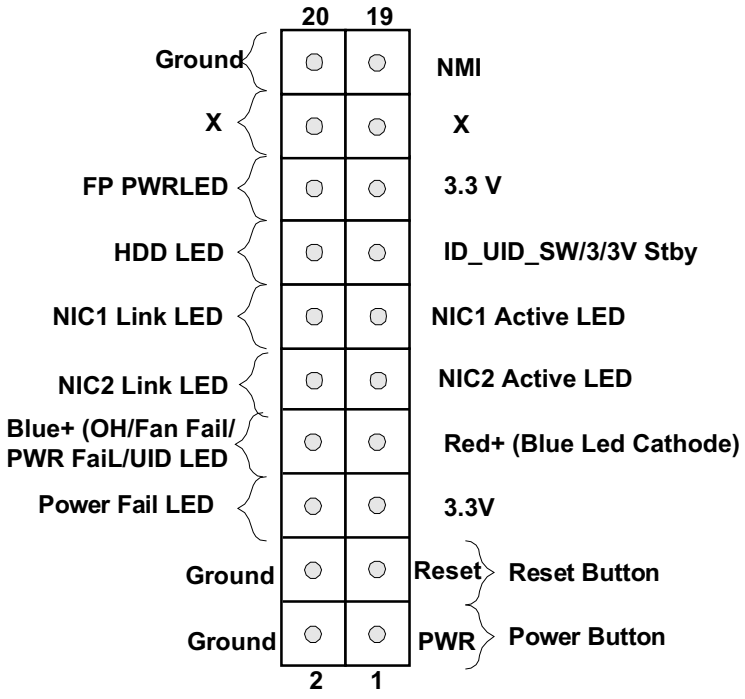
1. Rear UID Switch
2. Rear UID LED (LED 2)
3. FP UID Switch
4. FP UID LED

Front Control Panel

JF1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with Supermicro server chassis. See the figure below for the descriptions of the various control panel buttons and LED indicators. Refer to the following section for descriptions and pin definitions.

JF1 Header Pins





Front Control Panel Pin Definitions

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1. Refer to the table on the right for pin definitions.

NMI Button Pin Definitions (JF1)	
Pin#	Definition
19	Control
20	Ground

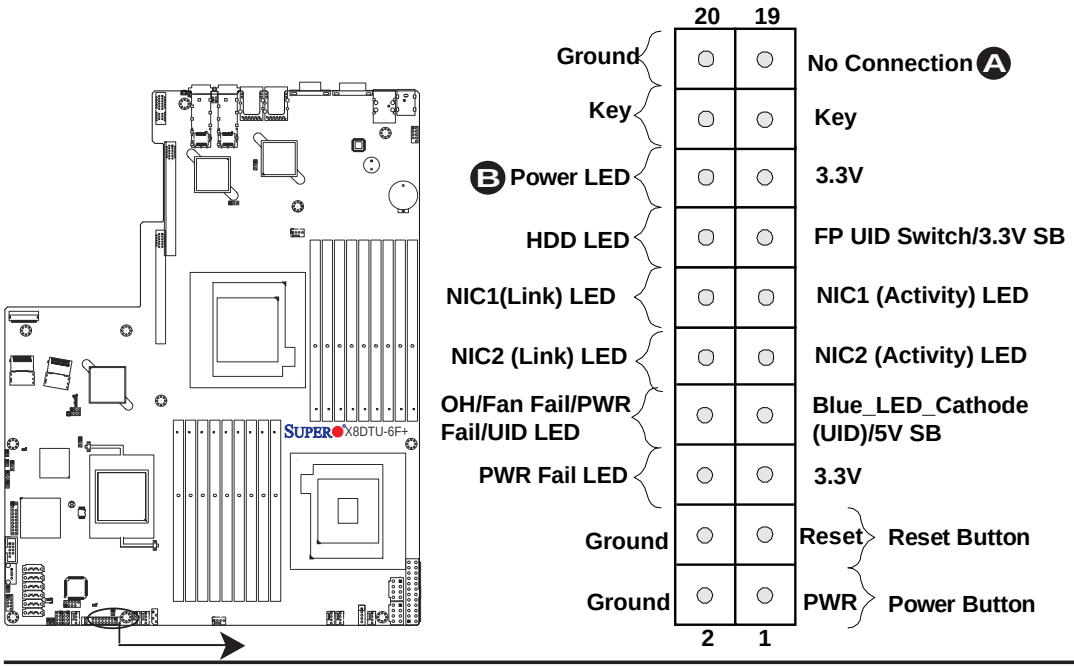
Power LED

The Power LED connection is located on pins 15 and 16 of JF1. Refer to the table on the right for pin definitions.

Power LED Pin Definitions (JF1)	
Pin#	Definition
15	+5V
16	Ground

A. NMI

B. PWR LED



HDD/FP UID Switch

The HDD/UID Switch connections are located on pins 13/14 of JF1. Attach a hard-drive LED cable to display HDD or SATA activities. This connection can also be used as a front panel UID (Unit Identifier) switch. The UID LED on Pin 7 of JF1 works in conjunction with this UID Switch located at Pin 13. When the user presses and releases the UID switch, the UID LED will be turned on or off to indicate the location of the unit. (Refer to Page 2-20 for more details.)

HDD/UID Switch Pin Definitions (JF1)

Pin#	Definition
13	UID Signal/3.3V SB
14	HDD Active

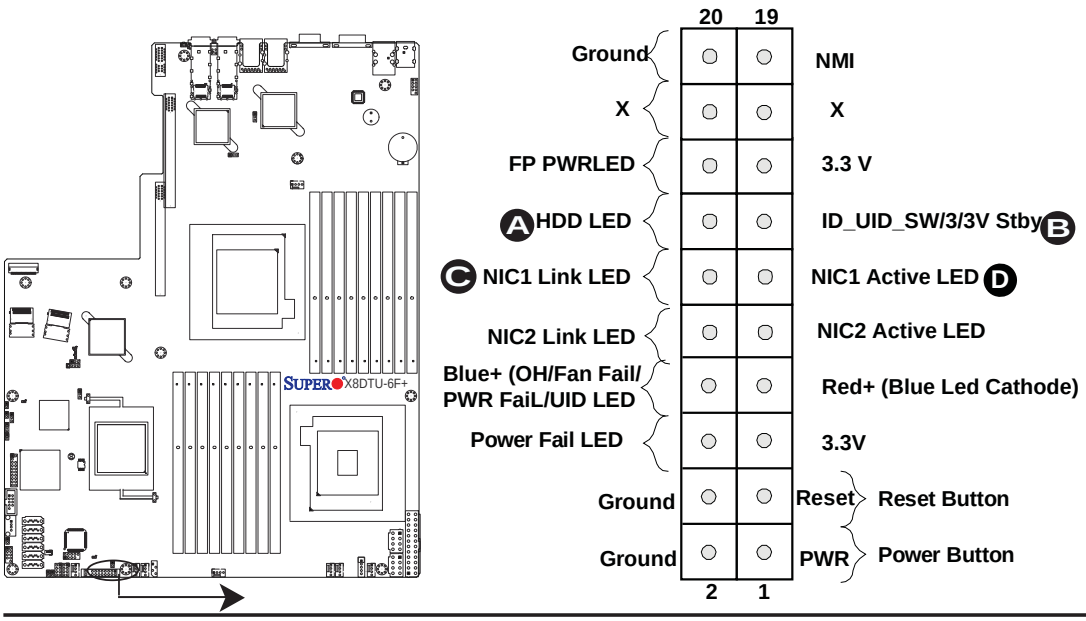
NIC1 LED Indicator

The NIC (Network Interface Controller) LED connections for GLAN port 1 are located on pins 11 and 12 of JF1. Attach a NIC LED cable to display LAN Port1 connections and activities. Refer to the table on the right for pin definitions.

GLAN1 LED Pin Definitions (JF1)

Pin#	Definition
11	NIC1 Activity
12	NIC1 Link

A. HDD LED
B. FP UID Switch
C. NIC1 Link LED
D. NIC1 Activity LED



NIC2 LED Indicator

The Network LED connections for GLAN port 2 are located on pins 9 and 10 of JF1. Attach a NIC LED cable to display LAN Port2 connections and activities. Refer to the table on the right for pin definitions.

GLAN2 LED Pin Definitions (JF1)	
Pin#	Definition
9	NIC2 Activity
10	NIC2 Link

Overheat (OH)/Fan Fail/PWR Fail/ UID LED

Connect an LED cable to pins 7 and 8 of JF1 to use the Overheat/Fan Fail/ Power Fail/UID LED connections. Refer to Page 3-20 for more information on UID Switches/LED Indicators. See the tables on the right for pin definitions.

OH/Fan Fail/ PWR Fail/Blue_UID LED Pin Definitions (JF1)	
Pin#	Definition
7	Blue_LED Cathode (UID)
8	OH/Fan Fail/PWR Fail/UID LED

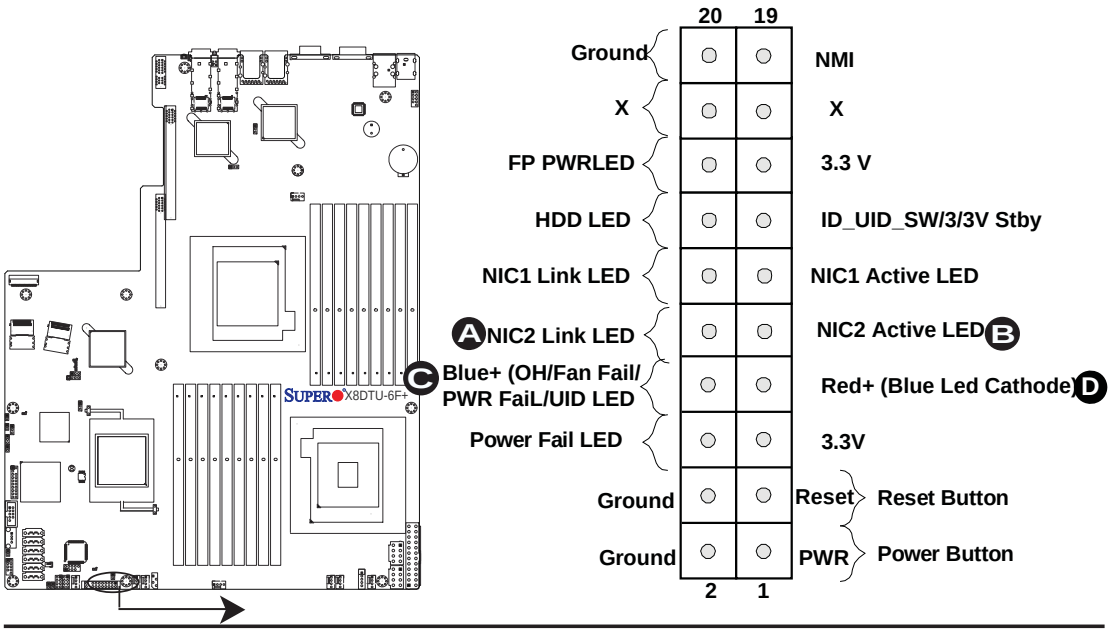
OH/Fan Fail/PWR Fail LED Status			
Pin 7	Pin 8	Red LED	Blue LED
Low	High	On: OH/FF/PWR Fail (Solid On: OH Fast Blinking: Fan Fail Slow Blinking: PWR Fail)	Off
High	Low	Off (System: Normal)	On UID LED
High	High	Off	Off

A. NIC 2 Link LED

B. NIC 2 Activity LED

C. OH/Fan Fail/PWR Fail/UID LED (Red LED)

D. UID LED (Blue)



Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1. Refer to the table on the right for pin definitions.

PWR Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	3.3 V
6	Ground

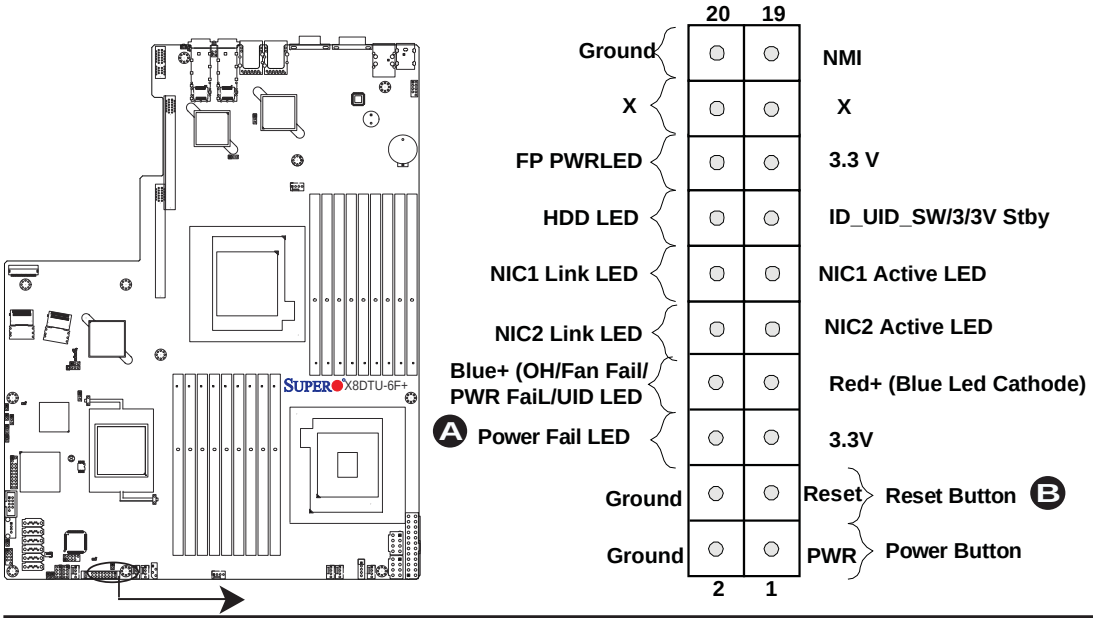
Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case. Refer to the table on the right for pin definitions.

Reset Button Pin Definitions (JF1)	
Pin#	Definition
3	Reset
4	Ground

A. PWR Fail LED

B. Reset Button

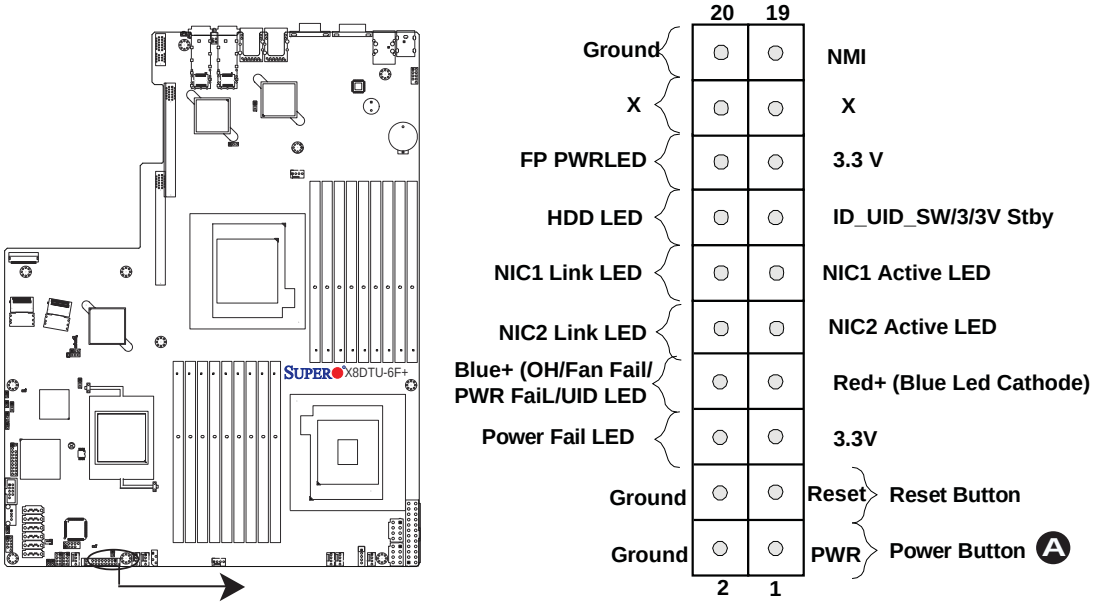


Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 5). To turn off the power when the system is in suspend mode, press the button for at least 4 seconds. Refer to the table on the right for pin definitions.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	+3V Standby

A. PWR Button



3-6 Connecting Cables

Power Connectors

A 24-pin main power supply connector (JPW1) and two 8-pin CPU PWR connectors (JPW2/JPW3) are located on the motherboard. These power connectors meet the SSI EPS 12V specification. In addition to the 24-pin ATX power connector, the 12V 8-pin CPU PWR connectors at JPW2/JPW3 must also be connected to your power supply. See the table on the right for pin definitions.

Warning! To avoid damaging the power supply or the motherboard, please use a power supply that contains a 24-pin and two 8-pin power connectors. Be sure to connect these connectors to the 24-pin (JPW1) and the two 8-pin (JPW2, JPW3) power connectors on the motherboard. Failure to do so will void the manufacturer warranty on your power supply and motherboard.

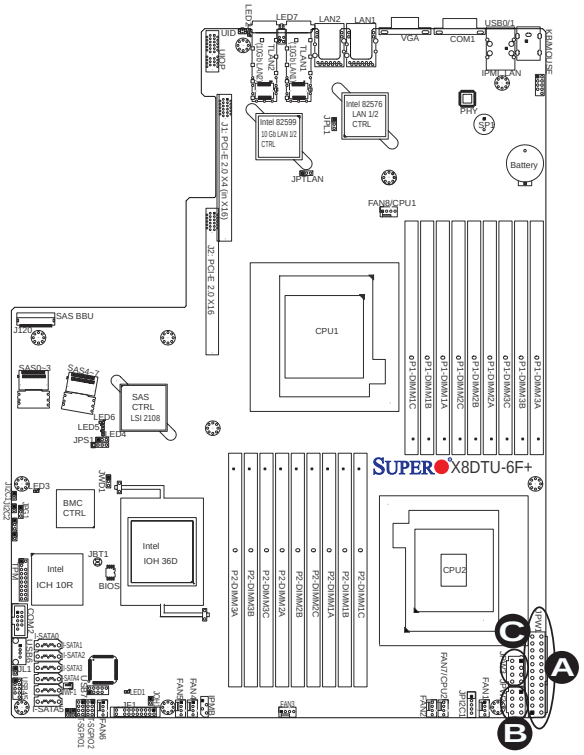
ATX Power 24-pin Connector Pin Definitions

Pin#	Definition	Pin #	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	COM	3	COM
16	PS_ON	4	+5V
17	COM	5	COM
18	COM	6	+5V
19	COM	7	COM
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	COM	12	+3.3V

12V 8-pin PWR Connector Pin Definitions

Pins	Definition
1 through 4	Ground
5 through 8	+12V

(Required)



A. 24-pin ATX PWR (Req'd)
B/C.8-pin Processor PWR (Req'd)

Fan Headers

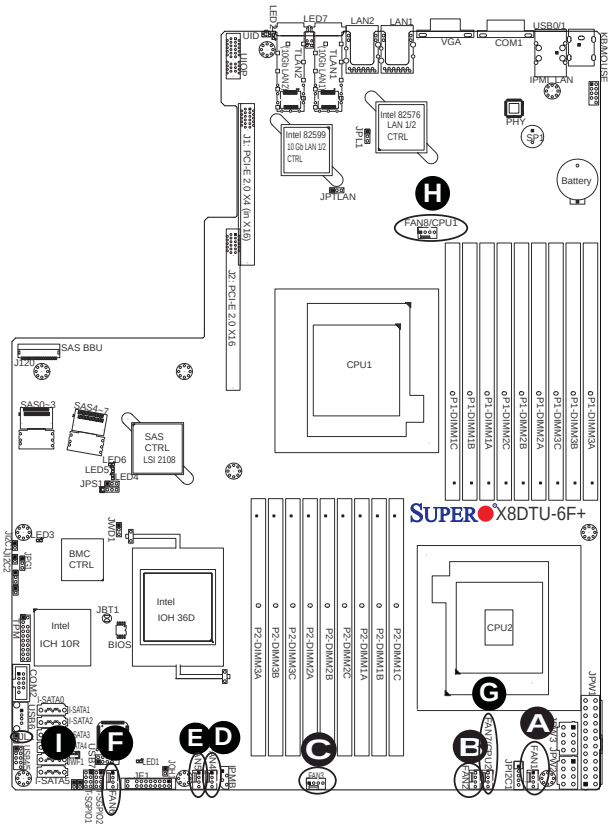
This motherboard has six chassis/system fan headers (Fan 1 to Fan 6) and two CPU fans (Fan7/Fan8) on the motherboard. All these 4-pin fans headers are backward compatible with the traditional 3-pin fans. However, fan speed control is available for 4-pin fans only. The fan speeds are controlled by Thermal Management via Hardware Monitoring in the Advanced Setting in the BIOS. See the table on the right for pin definitions.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	PWR Modulation

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach an appropriate cable from the chassis to inform you of a chassis intrusion when the chassis is opened.

Chassis Intrusion Pin Definitions	
Pin#	Definition
1	Intrusion Input
2	Ground



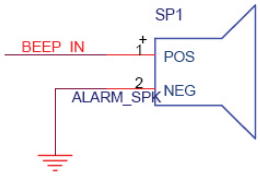
A. Fan 1 (CPU1 Fan)
B. Fan 2 (CPU2 Fan)
C. Fan 3
D. Fan 4
E. Fan 5
F. Fan 6
G. Fan 7 (CPU2 Fan)
H. Fan 8 (CPU1 Fan)
i. Chassis Intrusion

Internal Speaker

The Internal Speaker, located at SP1, can be used to provide audible indications for various beep codes. See the table on the right for pin definitions. Refer to the layout below for the location of the Internal Buzzer.

Internal Buzzer (SP1) Pin Definition

Pin#		Definitions
Pin 1	Pos. (+)	Beep In
Pin 2	Neg. (-)	Alarm Speaker

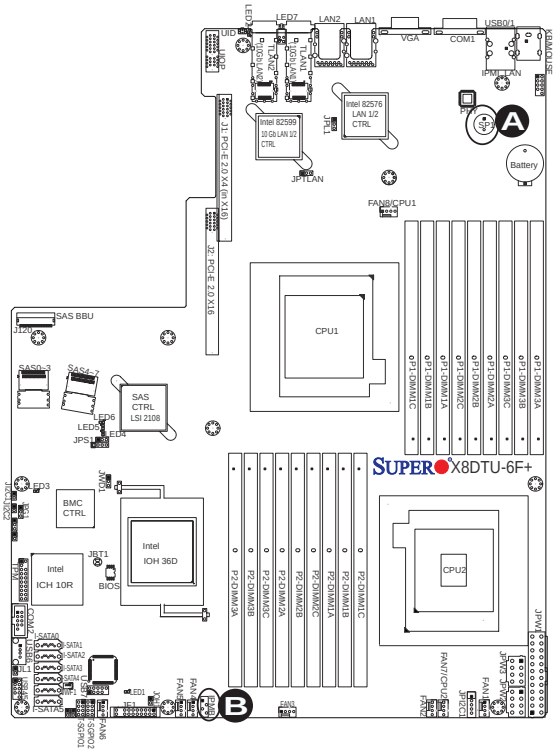


IPMB

A System Management Bus header for IPMI 2.0 is located at IPMB. Connect the appropriate cable here to use the IPMB I²C connection on your system.

IPMB Header Pin Definitions

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection



A. Internal Speaker (Buzzer)

B. IPMB

DOM Power Connector

A power connector for SATA DOM (Disk_On_Module) Devices is located at JWF1. Connect the appropriate cable here to provide power support for your DOM devices.

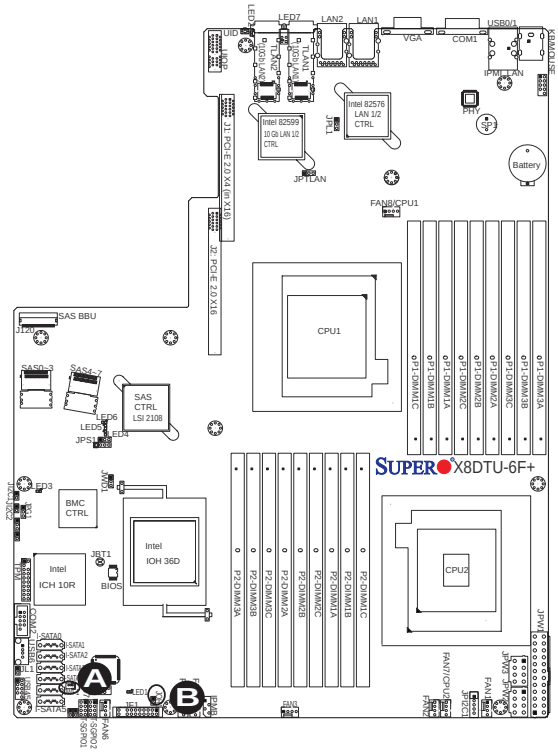
DOM PWR Pin Definitions	
Pin#	Definition
1	+5V
2	Ground
3	Ground

Overheat LED/Fan Fail

The JOH1 header is used to connect an LED indicator to provide warnings of chassis overheating or fan failure. This LED will blink when a fan failure occurs. Refer to the table on right for pin definitions.

Overheat LED Pin Definitions	
Pin#	Definition
1	5vDC
2	OH Active

OH/Fan Fail LED Status	
State	Message
Solid	Overheat
Blinking	Fan Fail



A. DOM PWR

B. Overheat LED

T-SGPIO 1/2 Headers

Two SGPIO (Serial General Purpose Input/Output) headers are located on the motherboard. These headers support Serial_Link interfaces for onboard SATA connections. See the table on the right for pin definitions.

T-SGPIO Pin Definitions

Pin#	Definition	Pin	Definition
1	NC	2	NC
3	Ground	4	Data
5	Load	6	Ground
7	Clock	8	NC

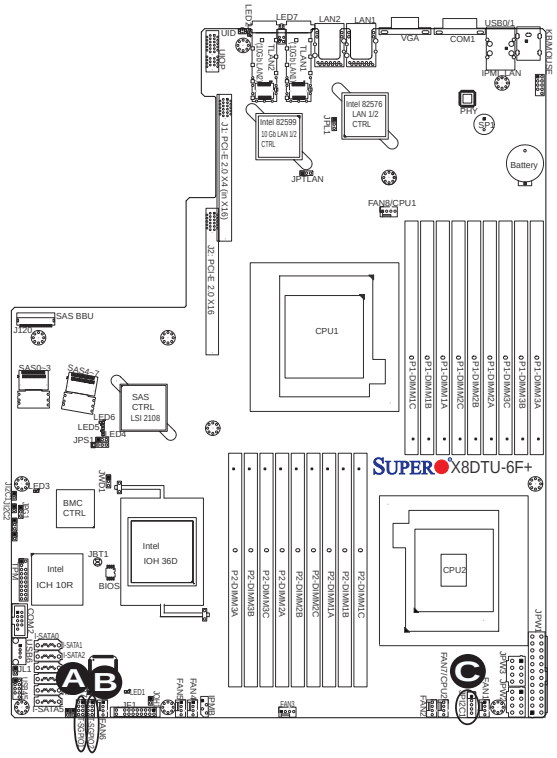
Note: NC= No Connection

Power SMB (I²C) Connector

Power System Management Bus (I²C) Connector (JPI²C1) monitors power supply, fan and system temperatures. See the table on the right for pin definitions.

PWR SMB Pin Definitions

Pin#	Definition
1	Clock
2	Data
3	PWR Fail
4	Ground
5	+3.3V



A. T-SGPIO-1

B. T-SGPIO-2

C. PWR SMB

UIO Power Connector

A Universal I/O Power (UIOP) connector is located next to the UID switch. Connect this header to the power supply to provide adequate power to the UIO device installed on the I/O slot for the device to function properly. See the layout below for the location.

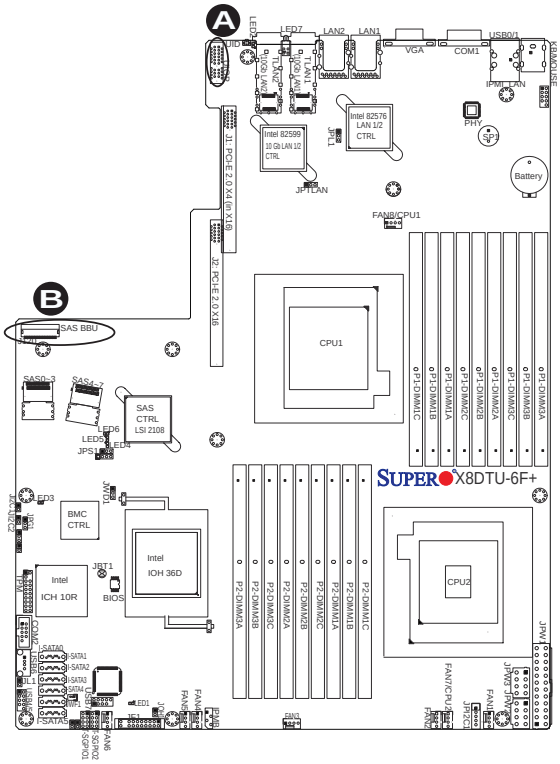
Universal I/O Power Header Pin Definitions

Pins#	Definition	Pin #	Definition
B1	+5V	A1	+3.3V
B2	+5V	A2	+3.3V
B3	+5V	A3	+3.3V
B4	+5V	A4	+3.3V
B5	+5V	A5	+3.3V
B6	+5V	A6	+3.3V
B7	+5V	A7	+3.3V
B8	+5V	A8	+3.3V
B9	+5V	A9	+3.3V
B10	+5V	A10	+3.3V
B11	-12V	A11	+3.3V
Key		Key	
B12	+3.3VSb	A12	+3.3V
B13	+3.3VSb	A13	+12V
B14	GND	A14	+12V
B15	GND	A15	+12V
B16	GND	A16	+12V
B17	GND	A17	+12V
B18	GND	A 18	GND

SAS BBU Connector

A SAS Battery-Backup Unit (BBU) Connector (J120) is located above the SAS ports on the motherboard. In the event of a power outage, the BBU unit will provide backup power for SAS connection use. See the layout below for the location.

(SAS BBU Part#: BTR-0018L-0000-LSI)



A. UIO Power Connector

B. SAS Battery-Backup Unit

Trusted Platform Module Header

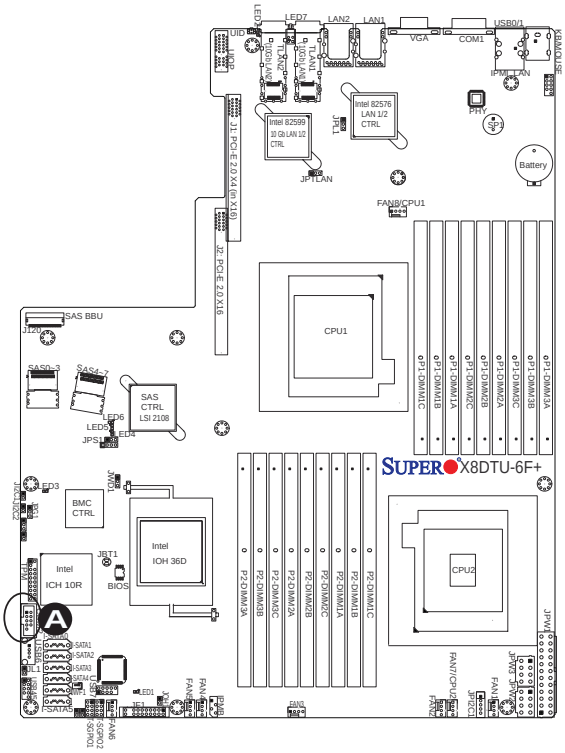
A Trusted Platform Module (TPM) header is located next to the COM2 connection. This header provides TPM support to ensure data integrity and system security. Refer to the table on the right for pin definitions.

Trusted Platform Module (TPM) Header Pin Definitions

Pin#	Definition	Pin #	Definition
1	LPC Clock	2	GND
3	LPC FRAME#	4	Key
5	LPC Reset#	6	+5V (X)
7	LAD3	8	LAD2
9	+3.3V	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDAT
15	+3V_DUAL	16	SERIRQ (X)
17	GND	18	CLKRUN(X)
19	LPCPD# (X)	20	LDRQ#(X)

Notes:
(X)=TPM does not use the signals.
SCL, SDAT are I^2C bus clock and data.

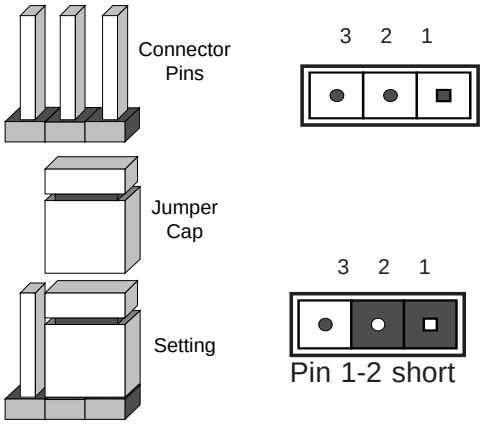
A. TPM Connector



3-7 Jumper Settings

Explanation of Jumpers

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the motherboard layout pages for jumper locations.



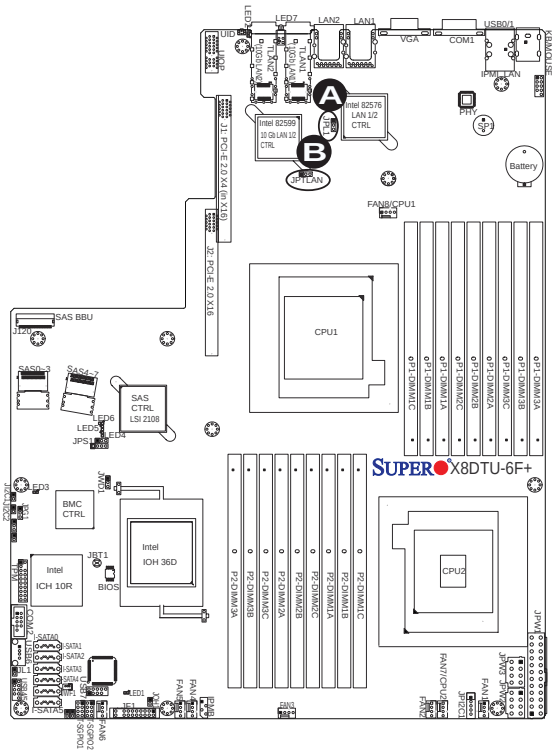
Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.

GLAN and TLAN Enable

JPL1 enables or disables the GLAN Port1/ GLAN Port2 on the motherboard. In addition, JPTLAN on the X8DTU-6TF+ is used to enable the 10 Gb LAN ports on this motherboard. The default setting is Enabled.

GLAN Enable Jumper Settings	
Jumper Setting	Definition
1-2	Enabled (default)
2-3	Disabled

(10 Gb) TLAN Enable Jumper Settings (X8DTU-6TF+)	
Jumper Setting	Definition
1-2	Enabled (default)
2-3	Disabled



A. GLAN Ports 1/2 Enable

B. TLAN Ports 1/2 Enable (X8DTU-6TF+)

CMOS Clear

JBT1 is used to clear CMOS. Instead of pins, this "jumper" consists of contact pads to prevent the accidental clearing of CMOS. To clear CMOS, use a metal object such as a small screwdriver to touch both pads at the same time to short the connection. Always remove the AC power cord from the system before clearing CMOS.

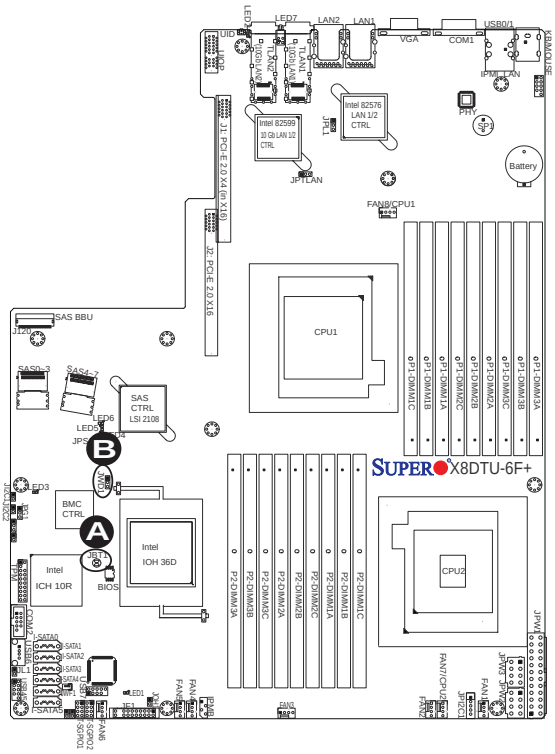
Note 1. For an ATX power supply, you must completely shut down the system, remove the AC power cord and short JBT1 to clear CMOS.

Note 2. Clearing CMOS will also clear any passwords.

Watch Dog Enable/Disable

Watch Dog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close Pins 1-2 to reset the system if an application hangs. Close Pins 2-3 to generate non-maskable interrupt signals for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in the BIOS.

Watch Dog Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Reset (default)
Pins 2-3	NMI
Open	Disabled



A. Clear CMOS

B. Watch Dog Enable

I²C Bus to PCI-Exp. Slots

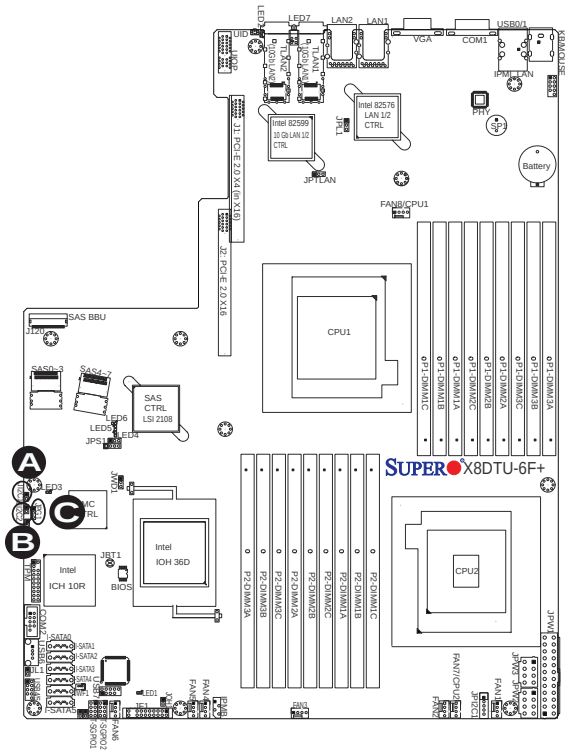
Jumpers JI²C1 and JI²C2 allow you to connect the System Management Bus (I²C) to PCI and PCI-Express slots. These two jumpers are to be set at the same time. The default setting is Open to disable the connections. See the table on the right for jumper settings.

I²C for PCI/PCI-E slots Jumper Settings	
Jumper Setting	Definition
Closed	Enabled
Open	Disabled (Default)

VGA Enable

Jumper JPG1 allows the user to enable the onboard VGA connectors. The default setting is 1-2 to enable the connection. See the table on the right for jumper settings.

VGA Enable Jumper Settings	
Jumper Setting	Definition
1-2	Enabled (Default)
2-3	Disabled



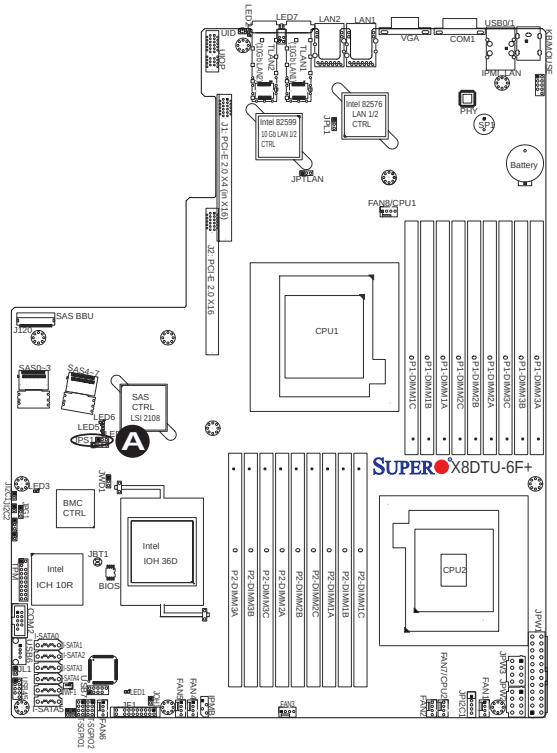
A. JI²C1
B. JI²C2
C. VGA Enable

SAS Enable

Use Jumper JPS1 to enable or disable SAS support on the motherboard. See the table on the right for jumper settings.

SAS Enable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	SAS Enabled (Default)
Pins 2-3	SAS Disabled

Note: For more information on IPMI configuration, please refer to the WPCM 450 IPMI BMC User's Guide posted on our website @ http://www.supermicro.com/support/manuals/.



A. SAS Enable

3-8 Onboard LED Indicators

GLAN 1/2 LEDs

Two LAN ports (LAN 1/LAN 2) are located on the I/O Backplane of the motherboard. Each Ethernet LAN port has two LEDs. The Green LED indicates activity, while the other Link LED may be green, amber or off to indicate the speed of the connections. See the tables at right for more information.

Rear View (when facing the rear side of the chassis)

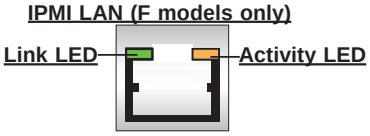
GLAN Activity LEDs (Left) LED State		
Color	Status	Definition
Green	Flashing	Active

GLAN Link LED (Right) LED State	
LED Color	Definition
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps

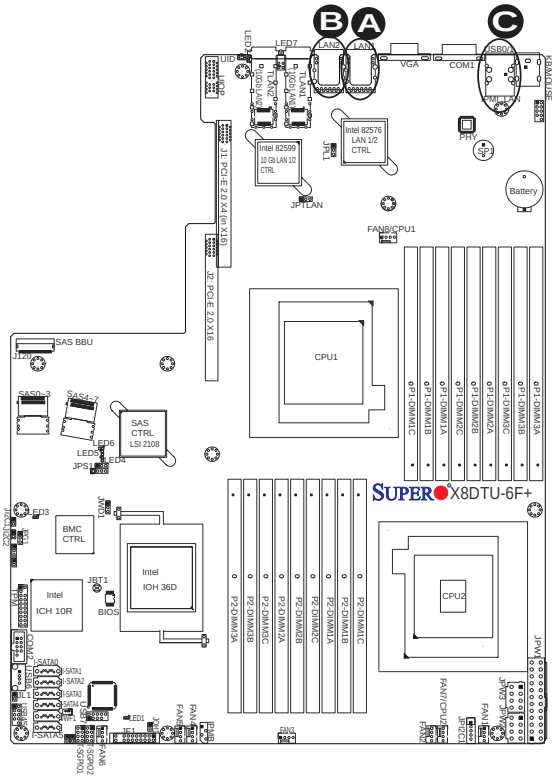
IPMI Dedicated LAN LEDs

In addition to LAN 1/LAN 2, an IPMI Dedicated LAN is located on the I/O Backplane above the USB 0/1 ports . The amber LED on the right indicates activity, while the green LED on the left indicates the speed of the connection. See the table at right for more information.

IPMI LAN (F models only)



IPMI LAN Link LED (Left) & Activity LED (Right)		
	Color/State	Definition
Link (Left)	Green: Solid	100 Mbps
Activity (Right)	Amber: Blinking	Active



A. LAN1 LEDs

B. LAN 2 LEDs

C. Dedicated LAN LEDs

10Gb_LAN LED (X8DTU-6TF+)

A 10Gb_LAN LED is located at LED 7 on the motherboard. When this LED color is in yellow, GLAN is connected and/or active. When this LED color is in green, 10 Gigabit LAN is connected and/or active. Please note that the 10 Gb_LAN connections are available on the X8DTU-6TF+ only. See the tables at right for more information.

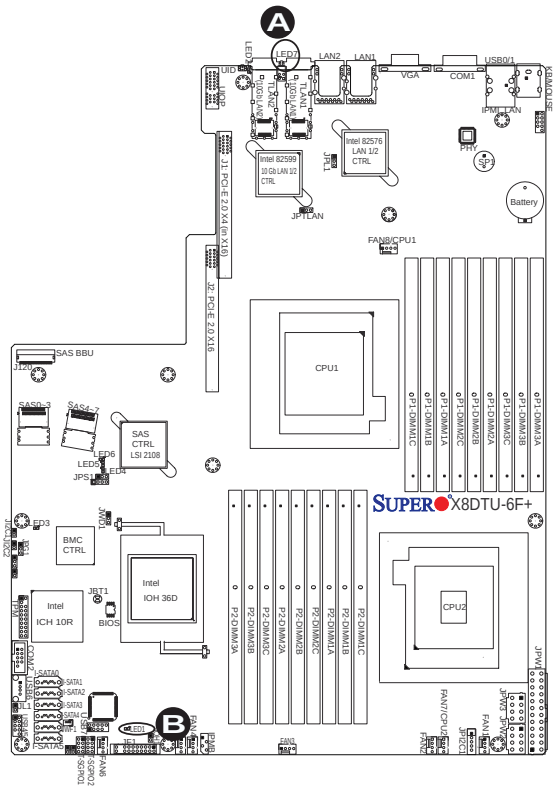
LAN LED (LED 7) In Yellow LED States	
Color/State	Definition
Yellow: Blinking	Gigabit LAN Active
Yellow: Solid On	Gigabit LAN Link (GLAN Connected)

LAN LED (LED 7)-In Green LED States	
Color/State	Definition
Green: Blinking	10 Gb_LAN Active (X8DTU-6TF+ only)
Green: On	10 Gb_LAN Link (10 Gb_LAN connected) (X8DTU-6TF+ only)

Onboard Power LED

An Onboard Power LED is located at LED1 on the motherboard. When this LED is lit, the system is on. Be sure to turn off the system and unplug the power cord before removing or installing components. See the table at right for more information.

Onboard PWR LED LED Status	
State/Color	Definition
Off	System Off (PWR cable not connected)
Green	System Power On



A. LAN LED

B. Onboard PWR LED

Rear UID LED

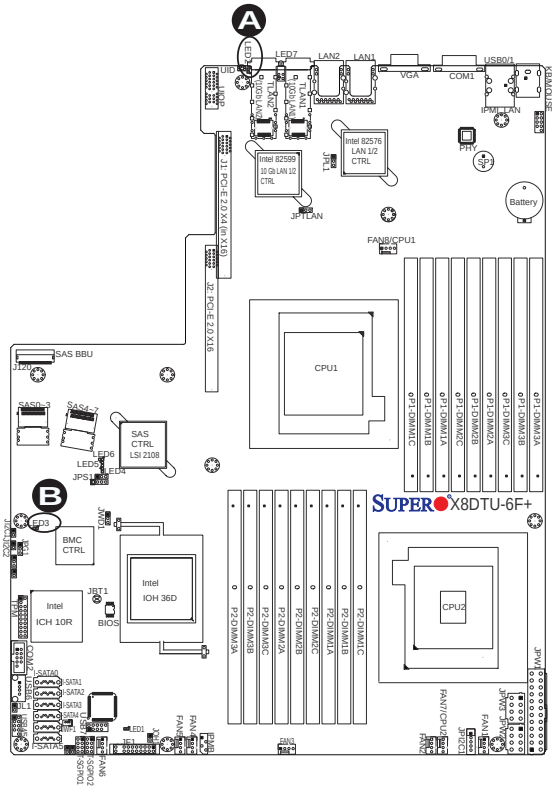
The rear UID LED is located at LED2 on the backplane. This LED is used in conjunction with the rear UID switch to provide easy identification of a system that might be in need of service. Refer to UID Switch on Page 3-20 for more information.

UID LED LED Status		
Color/State	OS	Status
Blue: On	Windows OS	Unit Identified
Blue: Blinking	Linux OS	Unit Identified

BMC Heartbeat LED

A BMC Heartbeat LED is located at LED 3 on the motherboard. When LED 3 is blinking, BMC functions normally. See the table at right for more information.

BMC Heartbeat LED LED State	
State	Definition
Blinking	BMC: Normal



A. UID LED

B. BMC Heartbeat LED

SAS Activity & SAS Heartbeat LEDs

A SAS Activity LED (LED 4) and a SAS Heartbeat LED (LED 5) are located on the motherboard. When LED 4 is blinking, SAS connections are active. When LED 5, SAS functions normally. See the table at right for more information.

SAS Activity & SAS Heartbeat LEDs
LED Status

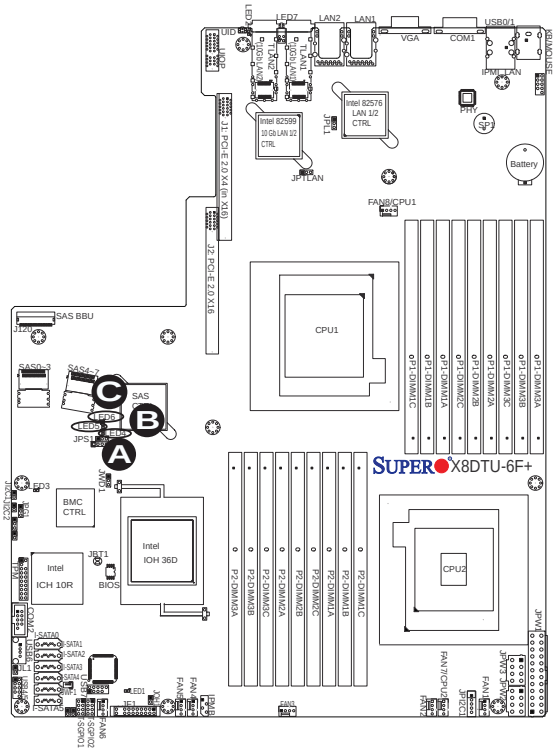
LED	State	Definition
LED 4 (SAS Activity LED)	Blinking	SAS: Active
LED 5 (SAS Heartbeat LED)	Blinking	SAS: Normal

SAS Error LED

A SAS Error LED is located at LED 6 on the motherboard. When LED 6 is on, a SAS error has occurred. See the table at right for more information.

SAS Error LED
LED Status

LED	State	Definition
LED 6 (SAS Error LED)	On	SAS Errors Occurred



A. SAS Activity LED (LED 4)

B. SAS Heartbeat LED (LED 5)

C. SAS Error LED (LED 6)

3-9 Serial ATA (SATA) and Serial Attached SCSI (SAS) Connections

Serial ATA Ports

There are six Serial ATA Ports (I-SATA0~I-SATA 5) located on the motherboard. These SATA ports, supported by the Intel ICH10R South Bridge, provide serial-link signal connections, which are faster than the connections of Parallel ATA. See the table on the right for pin definitions.

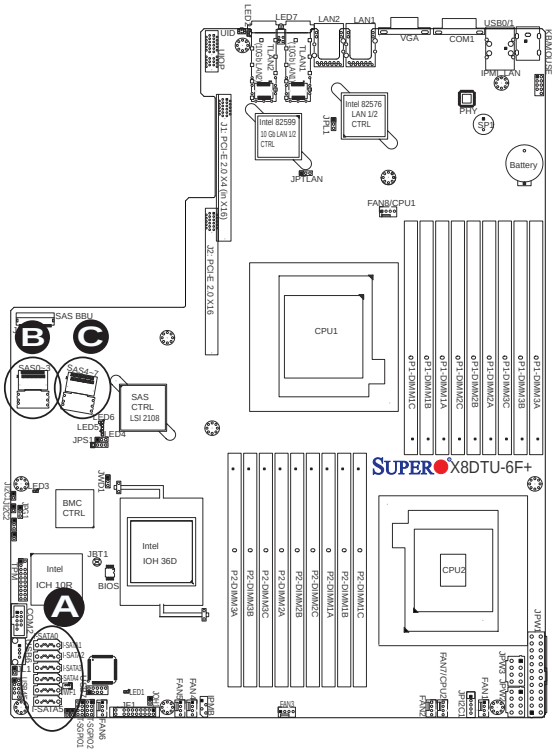
Serial ATA Pin Definitions

Pin#	Definition
1	Ground
2	TX_P
3	TX_N
4	Ground
5	RX_N
6	RX_P
7	Ground

SAS Ports

SAS Ports 0~3 and 4~7 provide Serial-Attached SCSI connections on the motherboard. These SAS ports are supported by the LSI 2108 controller. See the layout below for SAS port locations.

Note: For more information on SATA HostRAID configuration, please refer to the Intel SATA HostRAID User's Guide posted on our website @ http://www.supermicro.com/support/manuals/.



A. I-SATA0~5
B. SAS 0~3
C. SAS 4~7

Chapter 4

Troubleshooting

4-1 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Note: Always disconnect the power cord before adding, changing or installing any hardware components.

Before Power On

1. Make sure that there are no short circuits between the motherboard and chassis.
2. Disconnect all ribbon/wire cables from the motherboard, including those for the keyboard and mouse.
3. Remove all add-on cards.
4. Install CPU 1 first (-making sure it is fully seated) and connect the front panel connector to the motherboard.

No Power

1. Make sure that no short circuits between the motherboard and the chassis.
2. Make sure that the ATX power connectors are properly connected
3. Check that the 115V/230V switch on the power supply is properly set, if available.
4. Turn the power switch on and off to test the system, if applicable.
5. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

No Video

1. If the power is on but you have no video, remove all the add-on cards and cables.

2. Use the speaker to determine if any beep codes exist. Refer to the Appendix for details on beep codes.

System Boot Failure

If the system does not display POST or does not respond after the power is turned on, check the following:

1. Check for any error beep from the motherboard speaker.

- If there is no error beep, try to turn on the system without DIMM modules. If there is still no error beep, try to turn on the system again with only one processor in CPU Socket#1. If there is still no error beep, replace the motherboard.

- If there are error beeps, clear the CMOS settings by unplugging the power cord and contracting both pads on the CMOS Clear Jumper (JBT1). (Refer to Section 3-7 in Chapter 3.)

2. Remove all components from the motherboard, especially the DIMM modules. Make sure that the system's power is on and memory error beeps are activated.

3. Turn on the system with only one DIMM module. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure in this Chapter.

Losing the System's Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 2-6 for details on recommended power supplies.

2. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

3. If the above steps do not fix the Setup Configuration problem, contact your vendor for repairs.

Memory Errors

When a No_Memory_Beep_Code is issued by the system, check the following:

1. Make sure that the memory modules are compatible and that the DIMM modules are properly and fully installed. (For memory compatibility, refer to the Memory Compatibility Chart posted on our website @ http://www.supermicro.com.)

2. Check if different speeds of DIMMs have been installed. It is strongly recommended to use the same RAM speed for all DIMMs in the system.

3. Make sure you are using the correct type of DDR3 Registered ECC or Unbuffered ECC/Non-ECC 1333 MHz/1066 MHz/800 MHz SDRAM (recommended by the manufacturer).

4. Check for bad DIMM modules or slots by swapping a single module among all memory slots and check the results.

5. Make sure that all memory modules are fully seated in their slots. Follow the instructions given in Section 3-3 in Chapter 3.

6. Please follow the instructions given in the DIMM Population Tables listed in Section 3-3 to install your memory modules.

When the System Becomes Unstable

A. When the system becomes unstable during or after OS installation, check the following:

1. OS Compatibility: Check if the OS is compatible with your system

1. CPU/BIOS support: Check if your CPU is supported and if you have the latest BIOS installed.

2. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

   Note: Refer to the product page on our website http:\\www.supermicro.com for memory compatibility list.

3. HDD support: Check if all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.

4. System cooling: Check system cooling to make sure that all heatsink fans, and CPU/system fans, etc., work properly. Check Hardware Monitoring set-

tings in the BIOS to make sure that the CPU and System temperatures are within normal range. Also check the front panel Overheat LED and make sure that the Overheat LED is not on.

5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on minimum power requirement.

6. Proper software support: Make sure that the correct drivers are used.

B. When the system becomes unstable before or during OS installation, check the following.

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD/DVD disc, CD/DVD-ROM.

2. Cable connection: Check to make sure that all cables are connected and working properly.

3. Using minimum configuration for troubleshooting: Remove all unnecessary components, add-on cards first, and use minimum configuration (with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.

4. Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.

5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify problems.

6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

4-2 Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, please note that as a motherboard manufacturer, Supermicro does not sell directly to end-users, so it is best to first check with your distributor or reseller for troubleshooting

services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

1. Please go through the 'Troubleshooting Procedures' and 'Frequently Asked Question' (FAQ) sections in this chapter or see the FAQs on our web site (http://www.supermicro.com/support/faqs/) before contacting Technical Support.

2. BIOS upgrades can be downloaded from our website (http://www.supermicro.com/support/bios/).

3. If you still cannot resolve the problem, include the following information when contacting Supermicro for technical support:

- Motherboard model and PCB revision number
- BIOS release date/version (This can be seen on the initial display when your system first boots up.)
- System configuration

4. An example of a Technical Support form is on our web site at (http://www.supermicro.com/support/contact.cfm).

- Distributors: For immediate assistance, please have your account number ready when placing a call to our technical support department. We can be reached by e-mail at support@supermicro.com or by fax at: (408) 503-8000, option 2.

4-3 Frequently Asked Questions

Question: What are the various types of memory that my motherboard can support?

Answer: The X8DTU-6F+/X8DTU-6TF+ motherboard has 18 240-pin DIMM slots that support Registered ECC or Unbuffered ECC/Non-ECC DDR3 1333 MHz/1066 MHz/800 MHz SDRAM modules. It is strongly recommended that you do not mix memory modules of different speeds and sizes. Please follow all memory installation instructions given on Section 3-3 in Chapter 3.

Question: How do I update my BIOS?

It is recommended that you **do not** upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our web site at http://www.supermicro.com/support/bios/. Please check our BIOS warning message and the information on how to update your BIOS on our web site. Select

your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision and make sure that it is newer than your BIOS before downloading. You can choose from the zip file and the .exe file. If you choose the zip BIOS file, please unzip the BIOS file onto a bootable USB device. Run the batch file using the format AMI.bat filename.rom from your bootable USB device to flash the BIOS. Then, your system will automatically reboot.

Warning: Do not shut down or reset the system while updating the BIOS to prevent possible system boot failure!)

Note: The SPI BIOS chip used on this motherboard cannot be removed. Send your motherboard back to our RMA Department at Supermicro for repair. For BIOS Recovery instructions, please refer to the AMI BIOS Recovery Instructions posted at http://www.supermicro.com/support/manuals/.

Question: What's on the CD that came with my motherboard?

Answer: The supplied compact disc has quite a few drivers and programs that will greatly enhance your system. We recommend that you review the CD and install the applications you need. Applications on the CD include chipset drivers for the Windows OS, security and audio drivers.

Question: How do I handle the used battery?

Answer: Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

4-4 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete. For faster service, You can also request a RMA authorization online (http://www.supermicro.com/support/rma/).

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alternation, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Chapter 5

BIOS

5-1 Introduction

This chapter describes the AMI BIOS Setup Utility for the X8DTU-6F+/X8DTU-6TF+. The AMI ROM BIOS is stored in a Flash EEPROM and can be easily updated. This chapter describes the basic navigation of the AMI BIOS Setup Utility setup screens.

Starting BIOS Setup Utility

To enter the AMI BIOS Setup Utility screens, press the <Delete> key while the system is booting up.

Note: In most cases, the <Delete> key is used to invoke the AMI BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.

Each main BIOS menu option is described in this manual. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. Options in blue can be configured by the user. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (**Note**: the AMI BIOS has default text messages built in. Supermicro retains the option to include, omit, or change any of these text messages.)

The AMI BIOS Setup Utility uses a key-based navigation system called "hot keys". Most of the AMI BIOS setup utility "hot keys" can be used at any time during the setup navigation process. These keys include <F1>, <F10>, <Enter>, <ESC>, arrow keys, etc.

Note: Options printed in **Bold** are default settings.

How To Change the Configuration Data

The configuration data that determines the system parameters may be changed by entering the AMI BIOS Setup utility. This Setup utility can be accessed by pressing <Del> at the appropriate time during system boot.

Note: For AMI BIOS Recovery, please refer to the AMI BIOS Recovery Instructions posted on our website at http://www.supermicro.com/support/manuals/.

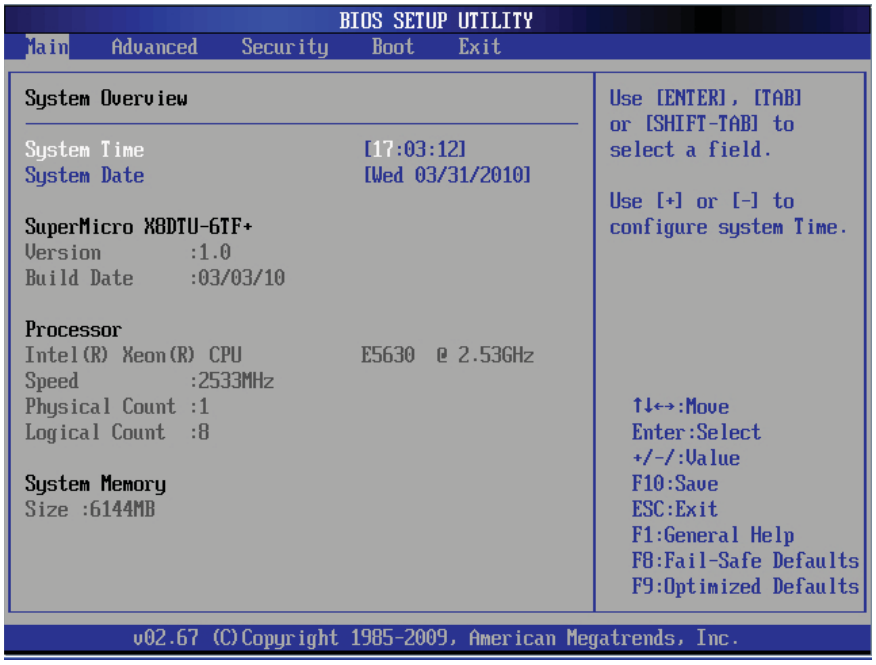
Starting the Setup Utility

Normally, the only visible Power-On Self-Test (POST) routine is the memory test. As the memory is being tested, press the <Delete> key to enter the main menu of the AMI BIOS Setup Utility. From the main menu, you can access the other setup screens. An AMI BIOS identification string is displayed at the left bottom corner of the screen below the copyright message.

Warning! Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you have to update the BIOS, do not shut down or reset the system while the BIOS is updating. This is to avoid possible boot failure.

5-2 Main Setup

When you first enter the AMI BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS Setup screen is shown below.



System Overview: The following BIOS information will display.

System Time/System Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the arrow keys. Key in new values through the keyboard and press <Enter>. Press the <Tab> key to move between fields. The date must be entered in Day MM/DD/YY format. The time is entered in HH:MM:SS format. (**Note:** The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.)

SuperMicro X8DTU-6TF+

- **Version**: This item displays the BIOS revision used in your system.
- **Build Date**: This item displays the date when this BIOS was complete.

Processor

The AMI BIOS will automatically display the status of the processor used in your system:

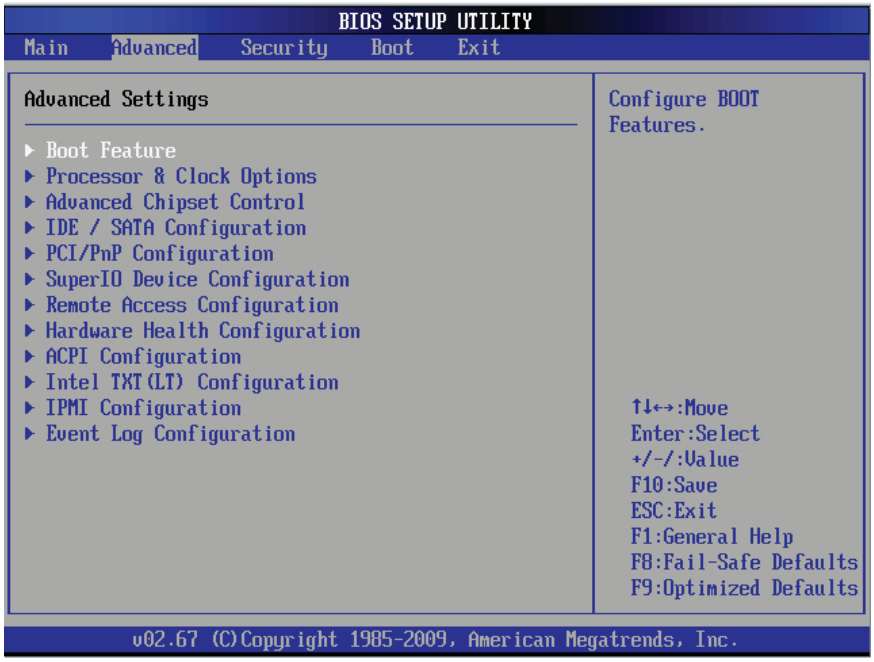
- **CPU Type**: This item displays the type of CPU used in the motherboard.
- **Speed**: This item displays the speed of the CPU detected by the BIOS.
- **Physical Count**: This item displays the number of processors installed in your system as detected by the BIOS.
- **Logical Count**: This item displays the number of CPU Cores installed in your system as detected by the BIOS.

System Memory

- **Size**: This displays the size of memory available in the system.

5-3 Advanced Setup Configurations

Use the arrow keys to select Advanced and press <Enter> to access the submenu items.



▶Boot Features

Quick Boot

If enabled, this feature will skip certain tests during POST to reduce the time needed for system boot. The options are **Enabled** and Disabled.

Quiet Boot

Use this feature to modify bootup screen display between POST messages or the OEM logo. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are **Enabled** and Disabled.

AddOn ROM Display Mode

This sets the display mode for Option ROM. The options are **Force BIOS** and Keep Current.

Bootup Num-Lock

This feature selects the Power-on state for the Numlock key. The options are Off and **On**.

Wait For 'F1' If Error

This forces the system to wait until the 'F1' key is pressed if an error occurs. The options are Disabled and **Enabled**.

Hit 'Del' Message Display

Select Enabled to display "Press DEL to run Setup" during POST. The options are **Enabled** and Disabled.

Interrupt 19 Capture

Interrupt 19 is the software interrupt that handles boot disk functions. When this item is set to Enabled, the ROM BIOS of the host adaptors will "capture" Interrupt 19 at bootup and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Disabled, the ROM BIOS of the host adaptors will not capture Interrupt 19, and the drives attached to these adaptors will not function as bootable devices. The options are **Enabled** and Disabled.

Watch Dog Function

If enabled, the Watch Dog Timer will allow the system to reboot when it is inactive for more than 5 minutes. The options are Enabled and **Disabled.**

Power Button Function

If this feature is set to Instant_Off, the system will power off immediately as soon as the user hits the power button. If this feature is set to 4_Second_Override, the system will power off when the user presses the power button for 4 seconds or longer. The options are **Instant_Off** and 4_Second_Override.

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Power-Off for the system power to remain off after a power outage. Select Power-On for the system power to turn on after a power outage. Select Last State to allow the system to resume its last state before a power outage. The options are Power-On, Power-Off and **Last State**.

▶Processor and Clock Options

This submenu displays the status of the processor used in the motherboard and allows the user to configure the Processor and Clock settings.

- **Type of the CPU**: This item displays the CPU type for the motherboard.
- **Frequency**: This item displays the CPU frequency for the motherboard.
- **CPUID**: This item displays the CPUID for the motherboard.
- **Microcode Revision**: This item displays the CPUID for the motherboard.
- **Cache L1**: This item displays the size of Cache L1 of the CPU for the motherboard.

- **Cache L2**: This item displays the size of Cache L2 of the CPU for the motherboard.
- **Cache L3**: This item displays the size of Cache L3 of the CPU for the motherboard.
- **Ratio Status**: This item displays the status of the CPU ratio.
- **Ratio Actual Value**: This item displays the actual value of the CPU ratio.

CPU Ratio

Select Manual to manually configure the CPU Ratio. Select Auto to allow the BIOS to automatically configure the CPU Ratio. The options are **Auto** and Manual.

Clock Spread Spectrum

Select Enable to enable Clock Spectrum support to allow the BIOS to monitor and attempt to reduce the level of Electromagnetic Interference caused by the components whenever needed. The options are **Disabled** and Enabled.

Hardware Prefetcher (Available when supported by the CPU)

If set to Enabled, the hardware prefetcher will prefetch streams of data and instructions from the main memory to L2 cache in the forward or backward manner to improve CPU performance. The options are Disabled and **Enabled**.

Adjacent Cache Line Prefetch (Available when supported by the CPU)

The CPU prefetches the cache line for 64 bytes if this option is set to Disabled. If this feature is set to Enabled, the CPU prefetches both cache lines for 128 bytes as comprised. The options are Disabled and **Enabled**.

MPS and ACPI MADT Ordering

This feature allows the user to configure the MPS (Multi-Processor Specifications) and ACPI (Advanced Configuration and Power Interface) settings for your motherboard. Select Modern Ordering if XP or a newer version of Windows OS is used in the motherboard. Select Legacy Ordering if 2000 or an earlier version is used. The options are **Modern Ordering** and Legacy Ordering.

Machine Checking Feature (Available when supported by the CPU.)

Select Enabled to use this feature which will allow the CPU to detect and report hardware (machine) errors via a set of model-specific registers (MSRs). The options are Disabled and **Enabled**.

Intel® Virtualization Technology (Available when supported by the CPU)

Select Enabled to use the feature of Virtualization Technology to allow one platform to run multiple operating systems and applications in independent partitions, creating multiple "virtual" systems in one physical computer. The options are **Enabled** and Disabled. **Note**: If there is any change to this setting, you will need to power off and restart the system for the change to take effect. Please refer to Intel's web site for detailed information.

Execute-Disable Bit Capability (Available when supported by the OS and the CPU)

Set to Enabled to enable Execute Disable Bit support which will allow the processor to designate areas in the system memory where an application code can be executed and where it cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor or damage the system during an attack. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

Intel AES-NI (Available when supported by the OS and the CPU)

It set to enabled, Intel AES-NI will add new encryption features to help accelerate AES SW application and provide code authorization and signature verification to improve system performance. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

Simultaneous Multi-Threading (Available when supported by the CPU)

Set to Enabled to use the Simultaneous Multi-Threading Technology, which will result in increased CPU performance. The options are Disabled and **Enabled.**

Active Processor Cores

Set to Enabled to use a processor's Second Core and beyond. (Please refer to Intel's web site for more information.) The options are **All,** 1 and 2.

Intel® EIST Technology

EIST (Enhanced Intel SpeedStep Technology) allows the system to automatically adjust processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. **Please refer to Intel's web site for detailed information.** The options are Disable (Disable GV3) and **Enable (Enable GV3)**.

Intel® TurboMode Tech (Available when Intel EIST Technology is enabled)

Select Enabled to use the TurboMode Technique to boost system performance. The options are **Enabled** and Disabled.

C1E Support

Select Enabled to use the feature of Enhanced Halt State. C1E significantly reduces the CPU's power consumption by reducing the CPU's clock cycle and voltage during a "Halt State". The options are Disabled and **Enabled**.

Intel® C-STATE Tech

If enabled, C-State is set by the system automatically to either C2, C3 or C4 state. The options are Disabled and **Enabled**.

C-State Package Limit Setting

If set to Auto, the AMI BIOS will automatically set the limit on the C-State package register. The options are **Auto**, C1, C3, C6 and C7.

C1 Auto Demotion

When enabled, the CPU will conditionally demote C3, C6 or C7 requests to C1 based on un-core auto-demote information. The options are Disabled and **Enabled.**

C3 Auto Demotion

When enabled, the CPU will conditionally demote C6 or C7 requests to C3 based on un-core auto-demote information. The options are Disabled and **Enabled.**

ACPI T State

When this feature is enabled, CPU Throttling state will be reported in the ACPI (Advanced Configuration and Power Interface) protocol. The options are **Disabled** and Enabled.

▶Advanced Chipset Control

The items included in the Advanced Settings submenu are listed below.

▶QPI and IMC Configuration

QuickPath Interconnect (QPI) is the connection between the CPU and the motherboard's I/O hub. Use this feature to modify speed and power management settings.

- **CPU Revision**: This item displays the CPU revision number.
- **Current QPI Frequency:** This item displays the current QPI frequency.
- **Current Memory Frequency:** This item displays the current CPU memory frequency.

- **Memory Reference Code:** This item displays the memory reference code for the motherboard.

- **QPI Reference Code:** This item displays the QPI reference code for the moth-erboard.

QPI (Quick Path Interconnect) Links Speed

QuickPath Interconnect (QPI) is the connection between the CPU and the motherboard's I/O hub. Use this feature to set data transfer speed for QPI Link connections. The options are Slow-Mode, and **Full Speed**.

QPI Frequency (Available if the item - QPI Link Speed is set to Full Speed)

This feature allows the user to select the desired QPI frequency. The options are **Auto**, 4.800 GT, 5.866GT, 6.400 GT.

QPI L0s and L1

This feature allows the user to set the QPI power state to a low setting. L0s and L1 are automatically selected by the motherboard. The options are **Disabled** and Enabled.

Memory Frequency

This feature forces a DDR3 module to run at a frequency other than what the system has detected. Select Force SPD (Serial Presence Detect) to force the module to run at a frequency specified on the SPD table. The available options are **Auto**, Force DDR-800, Force DDR-1066, Force DDR-1333 and Force SPD.

Memory Mode

If this item is set to Independent, all DIMMs are available to the operating system. If this item is set to Channel Mirroring, the motherboard maintains two identical copies of all data in memory for redundancy. If this item is set to Lockstep, the motherboard uses two areas of memory to run the same set of operations in parallel. The options are **Independent**, Channel Mirroring, and Lockstep.

Demand Scrubbing

This is a memory error-correction scheme when the Processor writes corrected data back into the memory block from where it was read by the Processor. The options are Enabled and **Disabled**.

Patrol Scrubbing

This is a memory error-correction scheme that works in the background looking for and correcting resident errors. The options are Enabled and **Disabled.**

Channel Interleave

This feature allows the user to configure the Memory Interleave settings for an onboard memory channel. The options are 1-way, 2-way, 3-way, 4-way, and **6-way**.

Bank Interleave

This feature allows the user to configure the Memory Interleave settings for an onboard memory bank. The options are 1-way, 2-way, and **4-way**.

Throttling - Closed Loop

Throttling improves reliability and reduces power in the processor by automatic voltage control during processor idle states. Available options are **Disabled** and Enabled.

Intel I/OAT

The Intel I/OAT (I/O Acceleration Technology) significantly reduces CPU overhead by leveraging CPU architectural improvements, freeing resources for more other tasks. The options are Disabled and **Enabled**.

DCA Technology (Available when Intel I/OAT is enabled)

Select Enabled to use Intel's DCA (Direct Cache Access) Technology to enhance data transfer efficiency. The options are **Enabled** and Disabled.

DCA Prefetch Delay

A DCA Prefetch is used with TOE components to prefetch data in order to shorten execution cycles and maximize data processing efficiency. Prefetching too frequently can saturate the cache directory and delay necessary cache accesses. This feature reduces or increases the frequency the system prefetches data. The options are [8], [16], [24], **[32]**, [40], [48], [56], [64], [72], [80], [88], [96], [104], [112], [120].

Intel VT-d

Select Enabled to enable Intel's Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to VMM through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The options are Enabled and **Disabled**.

Active State Power Management

Select Enabled to use the power management for signal transactions between the PCI Express L0 and L1 Links. Select Enabled to configure PCI-Exp. L0 and L1 Link power states. The options are **Disabled** and Enabled.

IOH PCI-E Max Payload Size

Some add-on cards perform faster with the coalesce feature, which limits the payload size to 128B; while others, with a payload size of 256B which inhibits the coalesce feature. Please refer to your add-on card user guide for the desired setting. The options are **256B** and 128B.

ME-HECI Support

Select Enabled to enable ME-HECI (Host Embedded Controller Interface) support, which will allow the Host OS to communicate directly with the Management Engine (ME) in a standard method for system management, effectively replacing the SMbus. The options are Enabled and **Disabled**.

▶South Bridge Configuration

This feature allows the user to configure the settings for the South Bridge chip.

USB Functions

This feature allows the user to decide the number of onboard USB ports to be enabled. The Options are: Disabled, 2 USB ports, 4 USB ports, 6 USB ports, 8 Ports, 10 Ports and **12 USB ports**.

USB 2.0 Controller (Available when the item: USB Functions is disabled)

This item indicates if the onboard USB 2.0 controller is activated. The default setting is **Enabled**.

Legacy USB Support

Select Enabled to use Legacy USB devices. If this item is set to Auto, Legacy USB support will be automatically enabled if a legacy USB device is installed on the motherboard, and vise versa. The settings are Disabled, Enabled and **Auto**.

Port60h/64h Emulation

Select Enabled to enable 60h/64h emulation for complete USB keyboard support for operating systems that are not compatible with USB devices. The options are Enabled and **Disabled.**

▶IDE/SATA Configuration

When this submenu is selected, the AMI BIOS automatically detects the presence of the IDE and SATA devices and displays the following items:

SATA#1 Configuration

If Compatible is selected, it sets SATA#1 to legacy compatibility mode, while selecting Enhanced sets SATA#1 to native SATA mode. The options are Disabled, Compatible and **Enhanced**.

Configure SATA#1 as (Not available when SATA#1 Configuration is disabled)

This feature allows the user to select the drive type for SATA#1. The options are **IDE,** RAID and AHCI. (When the option-RAID is selected, the item-ICH RAID Code Base will appear. When the option-AHCI is selected, the item-ICH AHCI Codebase will be available.)

ICH RAID Code Base (Available when the option-RAID is selected.)

Select Intel to enable Intel's SATA RAID firmware to configure Intel's SATA RAID settings. Select Adaptec to enable Adaptec's SATA RAID firmware to configure Adaptec's SATA RAID settings. The options are **Intel** and Adaptec.

ICH AHCI Codebase (Available when the option-AHCI is selected.)

Use this feature to select the AHCI Codebase for the ICH South Bridge. The options are BIOS Native Module and **Intel AHCI ROM**.

SATA#2 Configuration (Available when the option-IDE is selected.)

Selecting Enhanced will set SATA#2 to native SATA mode. The options are Disabled, and **Enhanced**.

IDE Detect Timeout (sec)

Use this feature to set the time-out value for the BIOS to detect the ATA, ATAPI devices installed in the system. The options are 0 (sec), 5, 10, 15, 20, 25, 30, and **35**.

Primary IDE Master/Slave, Secondary IDE Master/Slave, Third IDE Master, and Fourth IDE Master

These settings allow the user to set the parameters the slots indicated above. Press <Enter> to activate the following submenu screen for detailed options of these items. Set the correct configurations accordingly. The items included in the submenu are listed below.

Type

Select the type of device connected to the system. The options are Not Installed, **Auto**, CD/DVD and ARMD.

LBA/Large Mode

LBA (Logical Block Addressing) is a method of addressing data on a disk drive. In the LBA mode, the maximum drive capacity is 137 GB. For drive capacities over 137 GB, your system must be equipped with a 48-bit LBA mode addressing. If not, contact your manufacturer or install an ATA/133 IDE controller card that supports 48-bit LBA mode. The options are Disabled and **Auto**.

Block (Multi-Sector Transfer)

Block Mode boosts the IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per interrupt if Block Mode is not used. Block Mode allows transfers of up to 64 KB per interrupt. Select Disabled to allow data to be transferred from and to the device one sector at a time. Select Auto to allow data transfer from and to the device occur multiple sectors at a time if the device supports it. The options are **Auto** and Disabled.

PIO Mode

The IDE PIO (Programmable I/O) Mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases. The options are **Auto**, 0, 1, 2, 3, and 4.

Select Auto to allow the AMI BIOS to automatically detect the PIO mode. Use this value if the IDE disk drive support cannot be determined.

Select 0 to allow the AMI BIOS to use PIO mode 0. It has a data transfer rate of 3.3 MB/s.

Select 1 to allow the AMI BIOS to use PIO mode 1. It has a data transfer rate of 5.2 MB/s.

Select 2 to allow the AMI BIOS to use PIO mode 2. It has a data transfer rate of 8.3 MB/s.

Select 3 to allow the AMI BIOS to use PIO mode 3. It has a data transfer rate of 11.1 MB/s.

Select 4 to allow the AMI BIOS to use PIO mode 4. It has a data transfer bandwidth of 32-Bits. Select Enabled to enable 32-Bit data transfer.

DMA Mode

Select Auto to allow the BIOS to automatically detect IDE DMA mode when the IDE disk drive support cannot be determined.

Select SWDMA0 to allow the BIOS to use Single Word DMA mode 0. It has a data transfer rate of 2.1 MB/s.

Select SWDMA1 to allow the BIOS to use Single Word DMA mode 1. It has a data transfer rate of 4.2 MB/s.

Select SWDMA2 to allow the BIOS to use Single Word DMA mode 2. It has a data transfer rate of 8.3 MB/s.

Select MWDMA0 to allow the BIOS to use Multi Word DMA mode 0. It has a data transfer rate of 4.2 MB/s.

Select MWDMA1 to allow the BIOS to use Multi Word DMA mode 1. It has a data transfer rate of 13.3 MB/s.

Select MWDMA2 to allow the BIOS to use Multi-Word DMA mode 2. It has a data transfer rate of 16.6 MB/s.

Select UDMA0 to allow the BIOS to use Ultra DMA mode 0. It has a data transfer rate of 16.6 MB/s. It has the same transfer rate as PIO mode 4 and Multi Word DMA mode 2.

Select UDMA1 to allow the BIOS to use Ultra DMA mode 1. It has a data transfer rate of 25 MB/s.

Select UDMA2 to allow the BIOS to use Ultra DMA mode 2. It has a data transfer rate of 33.3 MB/s.

Select UDMA3 to allow the BIOS to use Ultra DMA mode 3. It has a data transfer rate of 44.4 MB/s.

Select UDMA4 to allow the BIOS to use Ultra DMA mode 4. It has a data transfer rate of 66.6 MB/s.

Select UDMA5 to allow the BIOS to use Ultra DMA mode 4. It has a data transfer rate of 100 MB/s.

Select UDMA6 to allow the BIOS to use Ultra DMA mode 4. It has a data transfer rate of 133 MB/s.

S.M.A.R.T. For Hard disk drives

Self-Monitoring Analysis and Reporting Technology (SMART) can help predict impending drive failures. Select Auto to allow the AMI BIOS to automatically detect hard disk drive support. Select Disabled to prevent the AMI BIOS from using the S.M.A.R.T. Select Enabled to allow the AMI BIOS to use the S.M.A.R.T. to support hard drive disk. The options are Disabled, Enabled, and **Auto**.

32Bit Data Transfer

Select Enable to enable the function of 32-bit IDE data transfer. The options are **Enabled** and Disabled.

▶PCI/PnP Configuration

Clear NVRAM

This feature clears the NVRAM (Non-Volatile Random Access Memory) during system boot. The options are **No** and Yes.

Plug & Play OS

Selecting Yes allows the OS to configure Plug & Play devices. (This is not required for system boot if Plug & Play is supported by your OS.) Select **No** to allow the AMI BIOS to configure all devices in the system.

PCI Latency Timer

This feature sets the latency Timer of each PCI device installed on a PCI bus. Select 64 to set the PCI latency to 64 PCI clock cycles. The options are 32, **64**, 96, 128, 160, 192, 224 and 248.

PCI Cache Line Size

This feature sets the cache line size of each PCI device installed on a PCI bus. The options are 16, 32, **64**, and 128 (MB).

PCI IDE BusMaster

When enabled, the BIOS uses PCI bus mastering for reading/writing to IDE drives. The options are Disabled and **Enabled.**

SXB1 PCI-E 2.0 x16/x8 Option ROM/SXB3 PCI-E 2.0 x8 Option ROM/SXB2 PCI-E 2.0 x8/x4 Option ROM/SXB2 PCI-E 2.0 x4 Option ROM

Select Enabled to enable PCI-E slots indicated above. It can also enable Option ROMs specified to boot computer using a network interface from these slots. The options are **Enabled** and Disabled.

Onboard LAN Option ROM Select

Select iSCSI to use iSCSI Option ROMs to boot the computing using a network device. Select iSCSI to use PXE Option ROMs to boot the computing using a network device. The options are iSCSI and **PXE**.

Load Onboard LAN1~LAN4 Option ROM

Select Enabled to enable the onboard LAN1, LAN2, LAN3 or LAN4 Option ROM. This is to boot computer using a network interface. The options are Enabled and **Disabled.**

Boot Graphics Adapter Priority

This feature allows the user to specify which graphics controller to be used as the primary boot graphics controller. The options are **Onboard VGA**, SXB1 PCI-E 2.0 x16, and Offboard VGA**.**

▶Super IO Device Configuration

Serial Port1 Address/ Serial Port2 Address

This option specifies the base I/O port address and the Interrupt Request address of Serial Port 1 and Serial Port 2. Select Disabled to prevent the serial port from accessing any system resources. When this option is set to Disabled, the serial port physically becomes unavailable. Select 3F8/IRQ4 to allow the serial port to use 3F8 as its I/O port address and IRQ 4 for the interrupt address. The options for Serial Port1 are Disabled, **3F8/IRQ4**, 3E8/IRQ4, 2E8/IRQ3, and 2F8/IRQ3. The options for Serial Port2 are Disabled, **2F8/IRQ3**, 3E8/IRQ4, 3F8/IRQ4, and 2E8/IRQ3.

Serial Port 2 Attribute

This feature allows the user to set COM 2 as a normal serial port or a virtual COM port used for SOL (Serial Over LAN). The options are **SOL** and COM.

▶Remote Access Configuration

Remote Access

Select Enabled to enable Remote Access support. The options are Disabled and **Enabled**. If Remote Access is set to Enabled, the following items will display:

Serial Port Number

This feature allows the user decide which serial port to be used for Console Redirection. The options are COM 1 and **COM 2**.

Base Address, IRQ

This item displays the based address and IRQ of the serial port specified above.

Serial Port Mode

This feature allows the user to set the serial port mode for Console Redirection. The options are **115200 8, n 1**; 57600 8, n, 1; 38400 8, n, 1; 19200 8, n, 1; and 9600 8, n, 1.

Flow Control

This feature allows the user to set the flow control for Console Redirection. The options are **None**, Hardware, and Software.

Redirection After BIOS POST

Select Disabled to turn off Console Redirection after Power-On Self-Test (POST). Select Always to keep Console Redirection active all the time after POST. (Note: This setting may not be supported by some operating systems.) Select Boot Loader

to keep Console Redirection active during POST and Boot Loader. The options are Disabled, Boot Loader, and **Always**.

Terminal Type

This feature allows the user to select the target terminal type for Console Redirection. The options are ANSI, **VT100**, and VT-UTF8.

VT-UTF8 Combo Key Support

A terminal keyboard definition that provides a way to send commands from a remote console. Available options are **Enabled** and Disabled.

Sredir Memory Display Delay

This feature defines the length of time in seconds to display memory information. The options are **No Delay,** Delay 1 Sec, Delay 2 Sec, and Delay 4 Sec.

▶Hardware Health Monitor

This feature allows the user to monitor system health and review the status of each item as displayed.

CPU Overheat Alarm

This option allows the user to select the CPU Overheat Alarm setting which determines when the CPU OH alarm will be activated to provide warning of possible CPU overheat.

Warning! 1.Any temperature that exceeds the CPU threshold temperature predefined by the CPU manufacturer may result in CPU overheat or system instability. When the CPU temperature reaches this predefined threshold, the CPU and system cooling fans will run at full speed. 2. To avoid possible system overheating, please be sure to provide adequate airflow to your system.

The options are:

- The Early Alarm: Select this setting if you want the CPU overheat alarm (including the LED and the buzzer) to be triggered as soon as the CPU temperature reaches the CPU overheat threshold as predefined by the CPU manufacturer.

- **The Default Alarm**: Select this setting if you want the CPU overheat alarm (including the LED and the buzzer) to be triggered when the CPU temperature reaches about 5ºC above the threshold temperature as predefined by the CPU manufacturer to give the CPU and system fans additional time needed for CPU and system cooling. In both the alarms above, please take immediate action as shown below.

CPU 1 Temperature/CPU 2 Temperature/System Temperature

This feature displays current temperature readings for the CPU and the System.

The following items will be displayed for your reference only:

CPU1 Temperature/CPU2 Temperature

The CPU thermal technology that reports absolute temperatures (Celsius/Fahrenheit) has been upgraded to a more advanced feature by Intel in its newer processors. The basic concept is each CPU is embedded by unique temperature information that the motherboard can read. This 'Temperature Threshold' or 'Temperature Tolerance' has been assigned at the factory and is the baseline on which the motherboard takes action during different CPU temperature conditions (i.e., by increasing CPU Fan speed, triggering the Overheat Alarm, etc). Since CPUs can have different 'Temperature Tolerances', the installed CPU can now send information to the motherboard what its 'Temperature Tolerance' is, and not the other way around. This results in better CPU thermal management.

Supermicro has leveraged this feature by assigning a temperature status to certain thermal conditions in the processor (Low, Medium and High). This makes it easier for the user to understand the CPU's temperature status, rather than by just simply seeing a temperature reading (i.e., 25^{o}C). The CPU Temperature feature will display the CPU temperature status as detected by the BIOS:

Low – This level is considered as the 'normal' operating state. The CPU temperature is well below the CPU 'Temperature Tolerance'. The motherboard fans and CPU will run normally as configured in the BIOS (Fan Speed Control).

User intervention: No action required.

Medium – The processor is running warmer. This is a 'precautionary' level and generally means that there may be factors contributing to this condition, but the CPU is still within its normal operating state and below the CPU 'Temperature Tolerance'. The motherboard fans and CPU will run normally as configured in the BIOS. The fans may adjust to a faster speed depending on the Fan Speed Control settings.

User intervention: No action is required. However, consider checking the CPU fans and the chassis ventilation for blockage.

High – The processor is running hot. This is a 'caution' level since the CPU's 'Temperature Tolerance' has been reached (or has been exceeded) and may activate an overheat alarm.

User intervention: If the system buzzer and Overheat LED has activated, take action immediately by checking the system fans, chassis ventilation and room temperature to correct any problems.

Notes: 1. The system may shut down if it continues for a long period to prevent damage to the CPU.

2. The information provided above is for your reference only. For more information on thermal management, please refer to Intel's Web site at www.Intel.com.

System Temperature: The system temperature will be displayed (in degrees in Celsius and Fahrenheit) as it is detected by the BIOS.

Fan 1 ~ Fan 8 Reading

This feature displays the fan speed readings from fan interfaces Fan 1 through Fan 8.

Fan Speed Control Modes

This feature allows the user to decide how the system controls the speeds of the onboard fans. The CPU temperature and the fan speed are correlative. When the CPU on-die temperature increases, the fan speed will also increase for effective system cooling. Select "Full Speed/FS" to allow the onboard fans to run at full speed for maximum cooling. The FS setting is recommended for special system configuration or debugging. Select "Performance/PF" for better system cooling. The PF setting is recommended for high-power-consuming and high-density systems. Select "Balanced/BL" for the onboard fans to run at a speed that will balance the needs between system cooling and power saving. The BL setting is recommended for regular systems with normal hardware configurations. Select "Energy Saving/ES" for best power efficiency and maximum quietness. The Options are: Full Speed/FS, Performance/PF, **Balanced/BL**, and Energy Saving/ES.

Voltage Monitoring

CPU1 Vcore, CPU2 Vcore, CPU1 DIMM, CPU2 DIMM, 1.1V, 3.3V, 1.5V, 5V, 12V, 3.3VSB, 5VSB, and Vbat.

▶ACPI Configuration

Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

ACPI Aware O/S

Select Yes to enable ACPI support for an operating system that supports ACPI. Select No to disable ACPI support for an OS that does not support ACPI. The options are **Yes** and No.

ACPI Version Features (Available ACPI Aware O/S='Yes')

The options are ACPI v1.0, **ACPI v2.0** and ACPI v3.0. Please refer to ACPI's website for further explanation: http://www.acpi.info/

ACPI APIC Support (Available ACPI Aware O/S='Yes')

Select Enabled to include the ACPI APIC Table Pointer in the RSDT (Root System Description Table) pointer list. The options are **Enabled** and Disabled.

APIC ACPI SCI IRQ

When this item is set to Enabled, APIC ACPI SCI IRQ is supported by the system. The options are **Enabled** and Disabled.

Headless Mode (Available ACPI Aware O/S='Yes')

This feature is used to enable system to function without a keyboard, monitor or mouse attached The options are Enabled and **Disabled**.

High Precision Event Timer

Select Enabled to activate the High Precision Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are **Enabled** and Disabled.

NUMA Support

Select Enabled to use the feature of Non-Uniform Memory Access to improve CPU performance. The options are Disabled, **Enabled** and NUMA for SLES 11 (SUSE Linux Enterprise Server 11).

WHEA Support

Select Enabled to enable Windows Hardware Error Architecture (WHEA) support which will provide a common infrastructure for the system to handle hardware errors on Windows platforms in order to reduce system crashes due to hardware errors and to enhance system recovery and health monitoring. The default setting is **Enabled**.

▶Intel TXT(LT) Configuration

Intel TXT Initialization

Select Enabled to initialize Intel Trusted Execution Technology (TXT) to provide the building blocks and create trusted-platforms for safe computing. The options are **Disabled** and Enabled. If this item is set to Enabled, the following items will display.

BIOS AC[SCLEAN] (Available when Intel TXT(LT) Initialization is enabled)

Select Enabled to allow the processor to load an authenticated code (AC) module in an internal memory partition to ensure that the CPU, chipset and all other related components are launched in the same protected environment for trusted-platform computing. The options are Disabled and **Enabled**.

BIOS AC[SCHECK] (Available when Intel TXT(LT) Initialization is enabled)

Select Enabled to allow the authenticated code (AC) module to check that hardware, the memory protection mechanism and the domain manager are configured properly to ensure safe computing in the Trusted Computing Platform Module. The options are Disabled and **Enabled**.

Load DPR (Available when Intel TXT(LT) Initialization is enabled)

Select Enabled to load a DPR which is a powerful, lightweight, and compact module used to track and record vital data in running electric-powered radio-controlled components for trusted-platform computing. The options are Disabled and **Enabled**.

Reset TPM Establishment Flag (Available when Intel TXT(LT) Initialization is enabled)

Select Enabled to reset Trusted Platform Module Establishment Flag for safe computing. The options are Disabled and **Enabled**.

▶Trusted Computing (Optional)

TCG/TPM Support

Select Yes on this item and enable the TPM jumper on the motherboard to enable TCG (TPM 1.1/1.2)/TPM support to improve data integrity and network security. The options are **No** and Yes. If this feature is set to Yes, the following items will display.

Indicate Physical (Available when TCG/TPM Support = 'Yes')

Select Yes for the BIOS to detect the presence of TPM devices at system boot. Select No to hide the presence of TPM devices at system boot. The options are Yes and **No**.

TPM Deactivated (Available when TCG/TPM Support = 'Yes')

Select Set to disable TPM support at bootup. Select Clear to activate the TPM devices to at bootup. Select Don't Change to keep the current TPM support status. The options are Set, Clear, and **Don't Change**.

TPM Owner (Available when TCG/TPM Support = 'Yes')

This feature allows the user to configure TPM Owner settings. The options are **Don't Change**, Enable Install, Disable Install, and Clear.

Execute TPM Command (Available when TCG/TPM Support = 'Yes')

Select Enabled to execute TPM commands you've selected. Select Don't Change to keep the current TPM commands without making any changes. Select Disabled to abandon the changes you have made on TPM commands. The options are Enabled, Disabled and **Don't Change**.

TPM Enable/Disable Status

This item displays the status of TPM Support to indicate if TPM is currently enabled or disabled.

TPM Owner Status

This item displays the status of TPM Ownership.

▶IPMI Configuration

Intelligent Platform Management Interface (IPMI) is a set of common interfaces that IT administrators can use to monitor system health and to manage the system as a whole. For more information on the IPMI specifications, please visit Intel's website at www.intel.com.

IPMI Firmware Version

This item displays the current IPMI Firmware Version.

Status of BMC

The Baseboard Management Controller (BMC) manages the interface between system management software and platform hardware. This item displays the status of the current BMC controller.

▶View BMC System Event Log

This feature displays the BMC System Event Log (SEL). It shows the total number of entries of BMC System Events. To view an event, select an Entry Number and pressing <Enter> to display the information as shown in the screen.

- Total Number of Entries
- SEL Entry Number
- SEL Record ID

- SEL Record Type
- Event Timestamp
- Generator ID
- Event Message Format Ver.
- Event Sensor Type
- Event Sensor Number,
- Event Dir Type
- Event Data.

Clear BMC System Event Log

Clear BMC System Log now

Select OK and press the <Enter> key to clear the BMC system log immediately. Select Cancel to keep the BMC System log. The options are **OK** and Cancel.

Caution: Any cleared information is unrecoverable. Make absolutely sure that you no longer need any data stored in the log before clearing the BMC Event Log.

▶Set LAN Configuration

Set this feature to configure the IPMI LAN adapter with a network address as shown in the following graphics.

Channel Number - This feature displays the channel number.

Channel Number Status - This feature returns the channel status for the Channel Number selected above: "Channel Number is OK" or "Wrong Channel Number".

IP Address Source

This features allows the user to select how an IP address is assigned to a client computer or network device. Select DHCP (Dynamic Host Configuration Protocol) to allow a client (computer or device) obtains an IP address from a DHCP server that manages a pool of IP addresses and network information on a "request and grant" basis. Upon time-out (or lease expiration), the IP address

assigned to the client can be reassigned to a new client. Select Static (Static Allocation) to allow the host server to allocate an IP address based on a table containing MAC Address/IP Address pairs that are manually entered (probably by a network administrator). Only clients with a MAC address listed in the MAC/IP Address Table will be assigned an IP address. The IP Address allocated to the client is on a longer term basis than that assigned by the DHCP mentioned in the other option. The options are **DHCP** and Static.

IP Address

The BIOS will automatically enter the IP address for the system when the IP Address Source is set to 'Static'. It can also allow the user to set an IP address for the system If the IP Address Source is set to "DHCP". However, the IP address may be overwritten. The value of each three-digit number separated by dots should not exceed 255.

Subnet Mask (When IP Address Source is set to 'Static')

This item displays the current subnet mask setting for your IPMI connection. The value of each three-digit number separated by dots should not exceed 255.

Gateway Address (When IP Address Source is set to 'Static')

The BIOS will automatically enter the Gateway address for the system when the IP Address Source is set to 'Static'. It can also allow the user to set a Gateway address for the system If the IP Address Source is set to "DHCP". However, the Gateway address may be overwritten. The value of each three-digit number separated by dots should not exceed 255.

MAC Address (When IP Address Source is set to 'Static')

The BIOS will automatically enter the MAC address for the system when the IP Address Source is set to 'Static'. It can also allow the user to set an MAC address for the system If the IP Address Source is set to "DHCP". However, the MAC address may be overwritten. Mac addresses are 6 two-digit hexadecimal numbers (Base 16, 0 ~ 9, A, B, C, D, E, F) separated by dots. (i.e., 00.30.48.D0.D4.60).

BMC Watch Dog Timer Action

Allows the BMC to reset or power down the system if the operating system hangs or crashes. The options are **Disabled**, Reset System, Power Down, Power Cycle. If the feature is not set to Disabled, the following item will display.

BMC Watch Dog TimeOut [Min:Sec]

This option appears if BMC Watch Dog Timer Action (above) is enabled. This is a timed delay in minutes or seconds, before a system power down or reset

after an operating system failure is detected. The options are **[5 Min]**, [1 Min], [30 Sec], and [10 Sec].

▶DMI Event Log Configuration

View Event Log

Use this option to view the System Event Log.

Mark All Events as Read

This option marks all events as read. The options are **OK** and Cancel.

Clear Event Log

This option clears the Event Log memory of all messages. The options are **OK** and **Cancel.**

PCIE Event Log

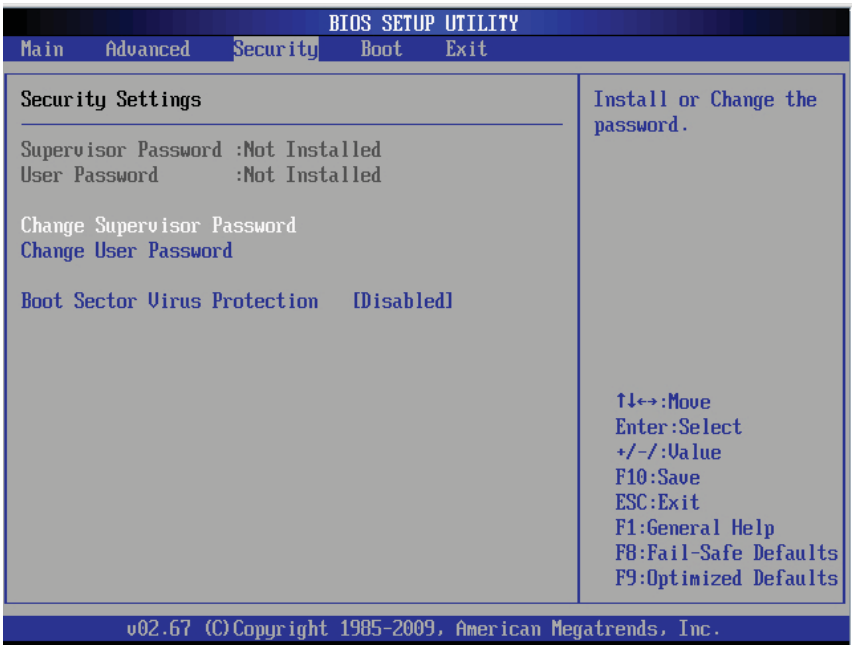
Select Yes to activate and display the PCI-Express slot event log. The options are Yes and **No**.

Memory ECC Error Log

Select Yes to activate and display ECC Memory Error event log. The options are **Yes** and No.

5-4 Security Settings

The AMI BIOS provides a Supervisor and a User password. If you use both passwords, the Supervisor password must be set first.



Supervisor Password

This item indicates if a Supervisor password has been entered for the system. "Not Installed" means a Supervisor password has not been used.

User Password

This item indicates if a user password has been entered for the system. "Not Installed" means that a user password has not been used.

Change Supervisor Password

Select this feature and press <Enter> to access the submenu, and then type in a new Supervisor Password.

User Access Level (Available when Supervisor Password is set as above)

Available options are **Full Access**: grants full User read and write access to the Setup Utility, View Only: allows access to the Setup Utility but the fields cannot be changed, Limited: allows only limited fields to be changed such as Date and Time, No Access: prevents User access to the Setup Utility.

Change User Password

Select this feature and press <Enter> to access the submenu , and then type in a new User Password.

Clear User Password (Available only when User Password has been set)

This item allows you to clear a user password after it has been entered.

Password Check

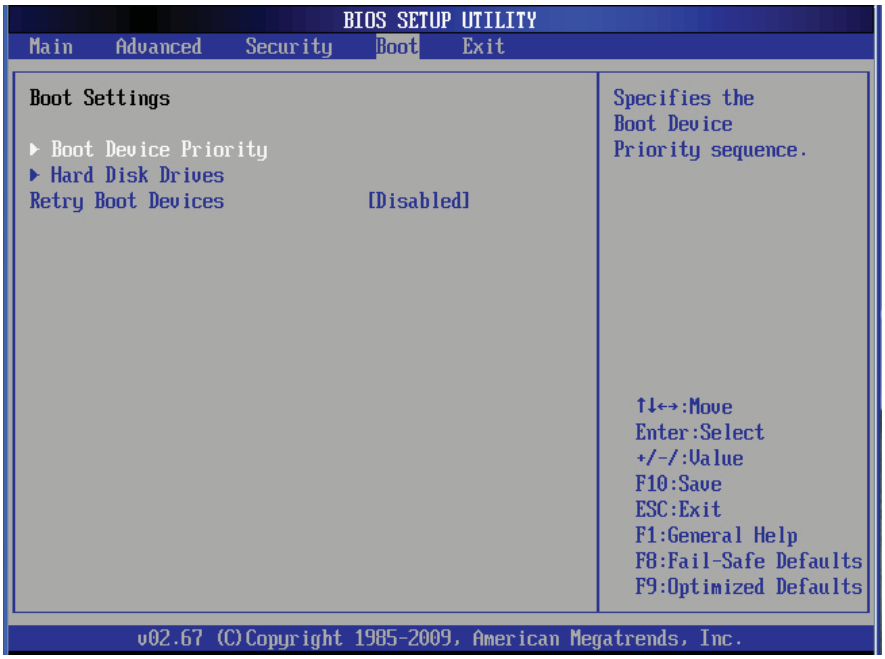
Select Setup for the system to check for a password at Setup. Select Always for the system to check for a password at bootup. The options are **Setup** and Always.

Boot Sector Virus Protection

When Enabled, the AMI BIOS displays a warning when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The options are Enabled and **Disabled**.

5-5 Boot Configuration

Use this feature to configure boot settings.



▶Boot Device Priority

This feature allows the user to specify the sequence of priority for the Boot Device. The settings are 1st boot device, 2nd boot device, 3rd boot device, 4th boot device, 5th boot device and Disabled.

- 1st Boot Device - [SATA: XXXXXXXXX]

▶Hard Disk Drive, CD/DVD-ROM Drive, Removable Drive

This feature allows the user to specify the boot sequence from all available hard disk drives. The settings are Disabled and a list of all hard disk drives that have been detected (i.e., 1st Drive, 2nd Drive, 3rd Drive, etc).

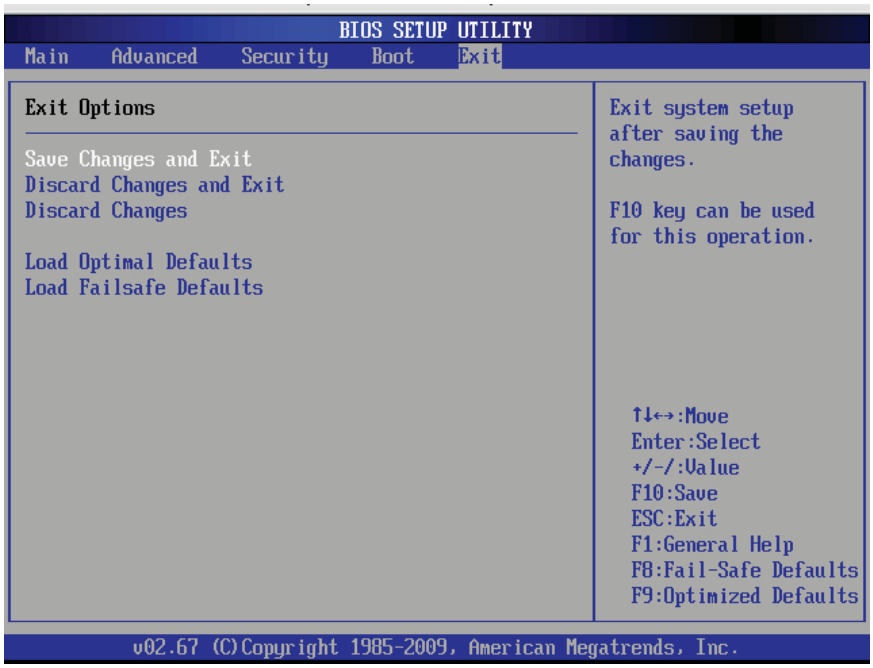
- 1st Drive - [SATA: XXXXXXXXX]

Retry Boot Devices

Select Enabled to enable Retry Boot Devices support to allow the system to attempt to boot from a specific boot device after a boot failure. The options are Enabled and **Disabled**.

5-6 Exit Options

Select the Exit tab from the AMI BIOS Setup Utility screen to enter the Exit BIOS Setup screen.



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave the BIOS Setup Utility and reboot the computer, so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS Utility Program.

Load Optimal Defaults

To set this feature, select Load Optimal Defaults from the Exit menu and press <Enter>. Then, select OK to allow the AMI BIOS to automatically load Optimal Defaults to the BIOS Settings. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications.

Load Fail-Safe Defaults

To set this feature, select Load Fail-Safe Defaults from the Exit menu and press <Enter>. The Fail-Safe settings are designed for maximum system stability, but not for maximum performance.

Notes

Appendix A

BIOS Error Beep Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list correspond to the number of beeps for the corresponding error.

A-1 BIOS Error Beep Codes

BIOS Error Beep Codes		
Beep Code	**Error Message**	**Description**
1 beep	Refresh	Circuits have been reset. (Ready to power up)
5 short beeps + 1 long beep	Memory error	No memory detected in the system
8 beeps	Display memory read/write error	Video adapter missing or with faulty memory
Continuous High (pitch) + Low (pitch) (siren-like)	System OH	System Overheat

Notes

Appendix B

Software Installation Instructions

B-1 Installing Software Programs

After you've installed the operating system, a screen as shown below will appear. You are ready to install software programs and drivers that have not yet been installed. To install these programs, click the icons to the right of these items.

Note: To install the Windows OS, please refer to the instructions posted on our website at http://www.supermicro.com/support/manuals/.

Driver/Tool Installation Display Screen

Note 1. Click the icons showing a hand writing on the paper to view the readme files for each item. Click on a computer icon to the right of an item to install an item (from top to the bottom) one at a time. After installing each item, you must reboot the system before proceeding with the next item on the list. The bottom icon with a CD on it allows you to view the entire contents of the CD.

Note 2. When making a storage driver diskette by booting into a driver CD, please set the SATA Configuration to "Compatible Mode" and configure SATA as IDE in the BIOS Setup. After making the driver diskette, be sure to change the SATA settings back to your original settings.

B-2 Configuring Supero Doctor III

The Supero Doctor III program is a web-based management tool that supports remote management. It includes Remote and Local Management tools. The local management is called the SD III Client. The Supero Doctor III program included on the CDROM that came with your motherboard allows you to monitor the environment and operation of your system. Supero Doctor III displays crucial system information such as CPU temperature, system voltages and fan status. See the screen shot below for a display of the Supero Doctor III interface.

Note: 1 The default user name and password are ADMIN.

Note 2: In the Windows OS environment, the Supero Doctor III settings take precedence over the BIOS settings. When first installed, Supero Doctor III adopts the temperature threshold settings previously set in the BIOS. Any subsequent changes to these thresholds must be made within Supero Doctor, since the SD III settings override the BIOS settings. For the Windows OS to adopt the BIOS temperature threshold settings, please change the SDIII settings to be the same as those set in the BIOS.

Supero Doctor III Interface Display Screen-I (Health Information)

Supero Doctor III Interface Display Screen-II (Remote Control)

Super Doctor III
Remote Management
SUPERMICRO
Remote Control
Graceful Power Control
Open Console
Power Control
Enter
Graceful power control
Supero Doctor III allows a user to inform the OS to reboot or shut down within a specified time (the default is 30 seconds). Before the system reboots or shuts down, it's allowed to cancel the action.
Requirements
Keep Supero SD3Service Daemon running at all times on this system.
Provide TCP/IP connectivity.
Power control

Note: SD III Software Revision 1.0 can be downloaded from our Web site at: ftp://ftp.supermicro.com/utility/Supero_Doctor_III/. You can also download SDIII User's Guide at: http://www.supermicro.com/PRODUCT/Manuals/SDIII/UserGuide.pdf. For Linux, we will still recommend that you use Supero Doctor II.

Notes

(Disclaimer Continued)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.